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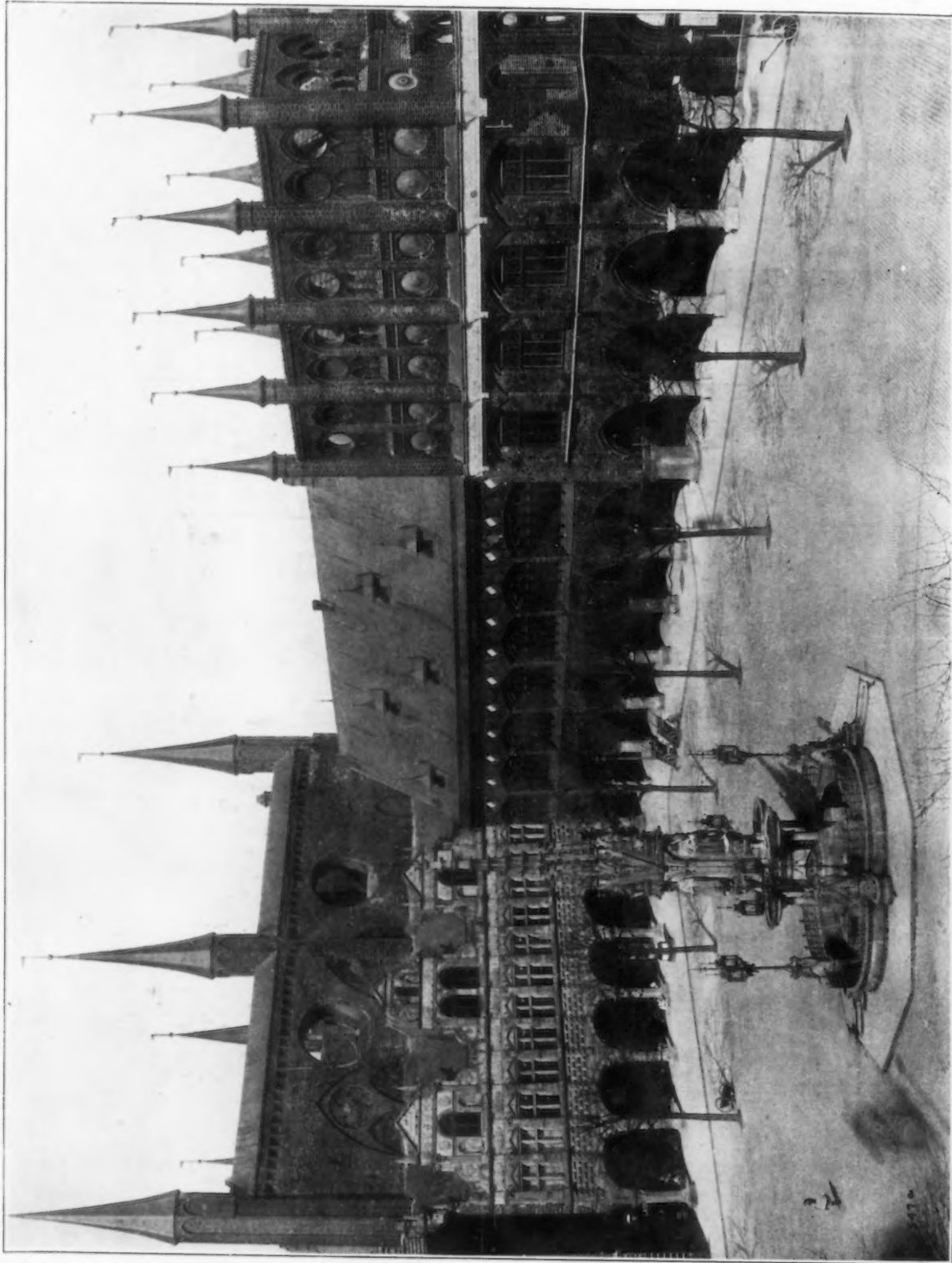
PLATE ILLUSTRATIONS

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TOWN HALL, FROM THE COURT, LUBECK, GERMANY. ✓

THE BRICKVILDER

VOL. 17 NO. 7

DEVOTED TO THE INTERESTS OF ARCHITECTURE IN MATERIALS OF CLAY

JULY 1908

The American Theater — VIII.

THEATER LIGHTING.

BY CLARENCE H. BLACKALL.

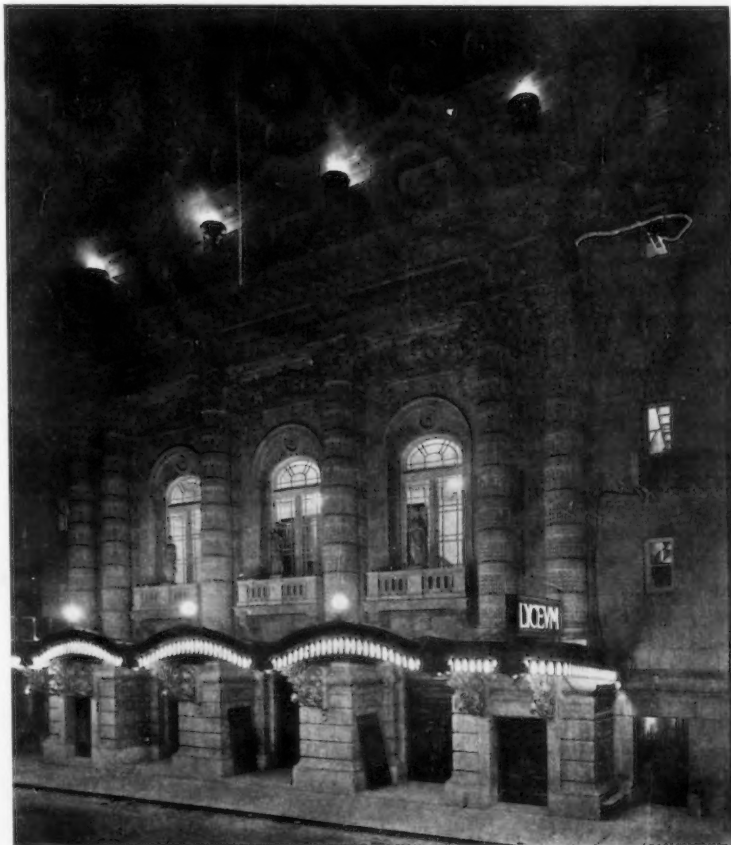
THEATER lighting as understood to-day, and especially as elaborated in this country, is practically a development of the last twenty years, and the possibilities of the electric light have been utilized in such manner as to completely change many of the effects, both in the house and on the stage. In the old days the term "theatrical" was synonymous with something cheap and tawdry, but the electric light, with its flood of illumination, makes it no longer possible to use silicia in place of satin, or jute in place of velvet, and in our best theaters the workmanship and the materials must now be of the best. And our houses demand a degree of illumination far beyond anything which was conceivable with gas, while, at the same time, anything like a glare in the eyes of the auditors must be studiously avoided. Theater lighting is really a specialized science as well as an art, which offers all sorts of fascinating possibilities. The demand seems to be constantly increasing for more lamps, more illumination; and where,

a few years ago, lamps of small candle power were used by the hundred, we now use high candle-power lamps by the thousand. It is true, in a measure, that the amount of light is often in inverse proportion to the moral standard of the theater, but every playhouse calls for, at least, a brilliantly illuminated entrance and foyer. Indeed, the whole exterior of a theater should be so designed as to

appear at its best at night. The Lyceum Theater, New York, is an excellent example of what can be accomplished in this direction, and in a different way, the Illinois Theater, Chicago, is very effective. The problem of exterior design is complicated by the business necessity for electric signs, which must be large and of striking appearance, and must stand out at an angle from the front of the building so as to catch the eye from a distance. These signs are often combined with the canopy over the entrance, and they can hardly be too brilliantly lighted; a thousand lights are none too much for a large canopy and sign, in addition to half a dozen flaming arcs. The manager will always urge the architect to be lavish with lights at the entrance, for that is where it pays.

For the auditorium itself opinions differ. Some prefer a subdued effect with all the lamps shrouded by rich stained glass, as in the Stuyvesant Theater, New York, where there is hardly light enough to see to read the programmes, and faces cannot be

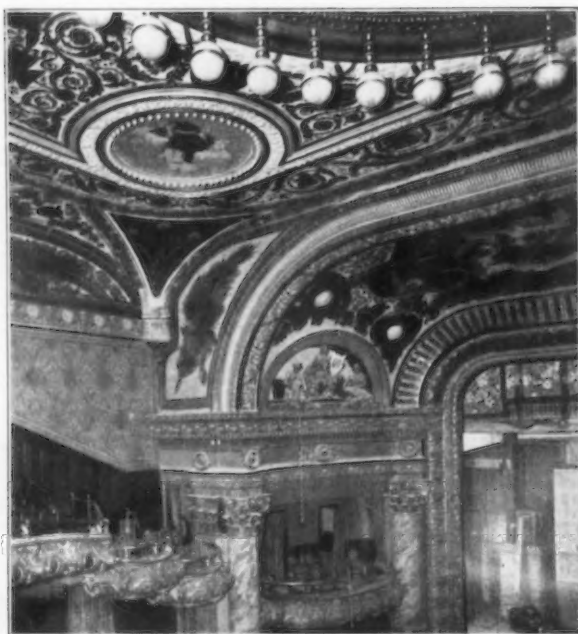
distinguished across the hall, but most theater-goers seem to prefer the cheerful brightness of the Keith houses, the Hippodrome at Cleveland, or the Lyric, New York. But on one point the American public is pretty well agreed: there must be no central chandelier to blind the eyes of balcony and gallery, and the attempt is always made to so distribute the lights as to give equal illumination every-



LYCEUM THEATER, NEW YORK — AT NIGHT.

where, a few years ago, lamps of small candle power were used by the hundred, we now use high candle-power lamps by the thousand. It is true, in a measure, that the amount of light is often in inverse proportion to the moral standard of the theater, but every playhouse calls for, at least, a brilliantly illuminated entrance and foyer. Indeed, the whole exterior of a theater should be so designed as to

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CEILING LIGHTS, COLONIAL THEATER, BOSTON.

where, and to kill all shadows. Manifestly, this is not the most artistic treatment but it is what goes.

Even with this handicap, however, monotony can be avoided, in a measure, by using the varieties of color afforded by electricity. In this respect we have much to learn from abroad. The former Eden Theater, in Paris, had strong amber incandescents throughout the house proper, white arc lights in the corridors and circulations, and ordinary incandescents in the foyer, producing a very interesting variety of effect. In the King's Way Theater, London, the wall lights are all enclosed in shades of a tender old-rose tone, while the lights on the ceiling are screened from below by strong amber opal glass. As a general rule, all electric bulbs should be screened in some way, either by ground glass or by an envelope of colored glass or stuff. Shades of the Holophane prismatic type are admirable in some cases, giving a diffused brilliancy without the slightest glare, which is very satisfactory. The ceiling globes of the Colonial Theater, Boston, are of this type, likewise the discs enclosing the lights on proscenium moldings of the Majestic Theater, Boston. Only rarely can arcs be used for interiors. The great Albert Hall in London has a splendid illumination from eight flaming arcs hung from the top of the dome, which fill the whole vast interior with a trembling, golden blaze, but the ordinary theater is too small for such intensity. The Cooper Hewitt mercury vapor lamp also offers some most fascinating possibilities, which have thus far never been utilized.

The outside display and sign lights and all of the lights in foyers, lobbies and stairs are best controlled from a switchboard near or in the manager's or the ticket office. All the lights in the house proper are controlled from the stage switchboard, and in the best houses are connected through a dimmer by which they can be turned up or down. The amount of light required is entirely a matter of judgment and is radically modified by many

factors such as the tones of the decoration, the character of the fixtures and the arrangement of the lights, but in a general way an allowance of 0.02 candle power per cubic foot, fairly well distributed, is a safe minimum. There should be a preponderance of light at the back of the house rather than at the front, and more light on the walls than on the ceiling, and the lights of the proscenium and the box fronts are best concealed or at least carefully shrouded.

A few special points have to be borne in mind in planning the electric work for a theater. All the exits are usually required by law to be marked by an illuminated sign. The lights for these signs should be on an independent circuit, not controlled by any switchboard. An improvement would be to fit these lights with some form of simple storage battery which would be charged through a bypass while the plant or the main supply is in operation, and would come into operation only when the main source of supply is cut off, thus giving illumination for a period of an hour or two, amply sufficient to allow the escape of an audience in emergency. The same system could to advantage also be applied to furnish some slight illumination for the exit corridors. A modification of this system has been applied to the New Amsterdam Theater in New York. Then there should, in addition, be installed on the main switchboard a safety switch which is thrown into operation by the pressure of a push button at any one of several points throughout the house, so that in an emergency an usher or the manager in the foyer can instantly throw on the lights in the auditorium. Such a switch is inexpensive and is positive in action, but is required, unfortunately, in only a few cities.

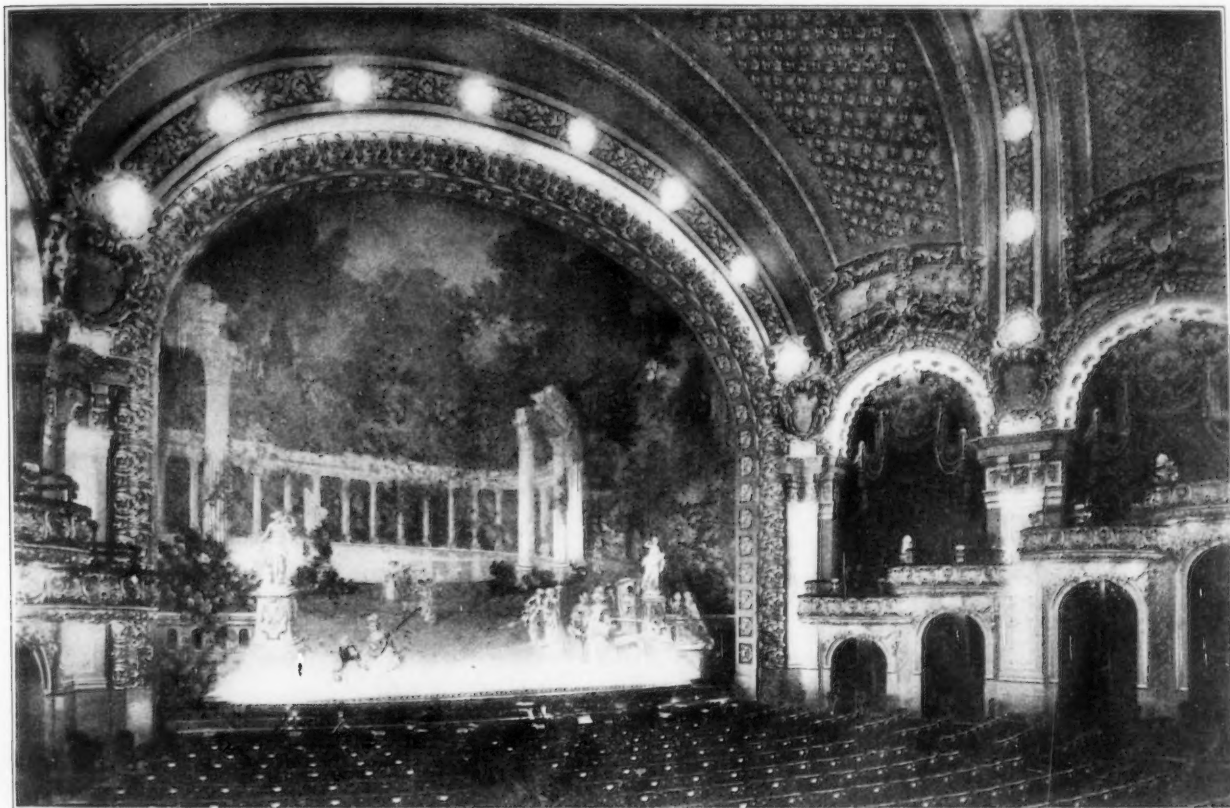
The stage lighting of the time of Shakespeare was limited to a few candles set along the front of the stage. The stage lighting to-day is one of the most intricate and sensitively organized functions of the theater. The stage electrician is a more important man than the stage carpenter to-day and far more depends upon him. The introduction of electricity has profoundly modified our ideas of illumination, but the end is not yet. We still cling to

STUYVESANT THEATER, NEW YORK.
Showing Interior Lighting

the intensely artificial scheme of footlights, which distorts every natural shadow on the human face, falsifies the effect of all the features and absolutely demands the intensive and unnatural coloring which we have come to associate with a theatrical makeup. A few attempts have been made to illuminate the stage from the front or from the sides in a more natural manner. Spot lights, overhead illumination have tried to give a more natural aspect to the human face. But the difficulty of successfully illuminating the stage from the front, while at the same time keeping the house in semi-darkness, is a very obvious one, and above all, the reluctance of the theatrical profession to accept so glaring an innovation as the omission of footlights and the diminution of grease

These lamps, by the way, are usually colored by a stain applied to the outside of the glass, there being a practical difficulty in obtaining bulbs colored in the glass of uniform tone at a reasonable cost. This stain has to be renewed at frequent intervals and is a troublesome feature of stage lighting.

The depth of the stage from the curtain line towards the back of the house is arbitrarily divided into spaces of about three and one-half feet called entrances, with a space of about a foot and a half left between each entrance. Over these intermediate spaces are rows of lights suspended from the gridiron in such manner that they can be raised or lowered, the cables supplying the wires being suspended either from the first fly gallery or,



MAJESTIC THEATER, BOSTON, SHOWING INTERIOR LIGHTING.

paint and powder will undoubtedly long stand in the way of a rational stage lighting.

In order to understand the system of stage lighting, reference must be had to a typical stage plan and section.

The footlights are carried across the front of the apron, the lamps being set at a slight angle, as shown by the detail. For a 40-foot curtain opening a good allowance would be to put in 48 white lights, or lamps with clear glass globes, 48 reds and 48 blues, making all the lamps of 32 candle power. The detail shows a typical construction of the footlight trough and hood, both of which are lined with tin and painted with white asbestos paint, this material giving a softer reflection than would be possible from a polished surface, besides being much easier on the actor's eyes. It is an excellent scheme to separate the lamps by partitions, so that the colors will not mix.

better, from the gridiron itself. These rows of lights are called borders, or border lights, and contain the same number of 32-candle-power lamps that are put in the footlights. The footlights, however, are arranged so as to leave a free space of not less than two feet at each end of the apron while the border lights are made the full width of the curtain opening. In some entrances the whole frame of the border is suspended in such manner that it can be tilted one way or the other so as to throw the reflections either straight to the rear or more downward. The inner surface of the reflector enclosing the border lights is painted with asbestos white paint.

Opposite each entrance and about five feet back from the line of the curtain there are arranged usually two floor pockets, into which connections can be plugged for either incandescent or arc lights. The incandescent lights



ILLINOIS THEATER, CHICAGO.
Showing Exterior Lighting.

are arranged in bunches of five 32-candle-power lamps about a circular reflecting disk and mounted on an adjustable extension iron stand with heavy base which can be moved about as desired. This is called a bunch light. The arc lights when used are enclosed in a box fitted with an adjustable lens or reflector after the manner of search-lights and are termed spot lights. For illuminating back drops additional light is sometimes required from the floor. This is obtained by plugging into one of the floor connections a cable leading to a row of lights arranged on a long strip of wood, this strip being placed on the floor with the lights up, and constituting what is known as a strip light. On the proscenium wall, each side of the curtain opening, there is a small gallery raised eight or ten feet above the stage level, in which are installed not less than two connections for spot lights. These are usually made at a capacity of fifty amperes each, and the reason for two connections is to allow for different colors being used at once. On each side of the curtain opening, on the face of the wall towards the stage, there will be a vertical row of twenty or thirty 32-candle-power lamps on a movable strip, constituting the proscenium lights or rows.

In some theaters the borders are furnished with four colors, white, blue, red and yellow. Also for special effects other colored lamps can be inserted in the sockets of either the borders or the bunch lights. It is usual also to provide for an independent circuit to the center of the gridiron and connected to a long flexible cable, to which can be attached a chandelier. Connections for fireplace or other local illumination are generally made to one of the floor plugs in an entrance.

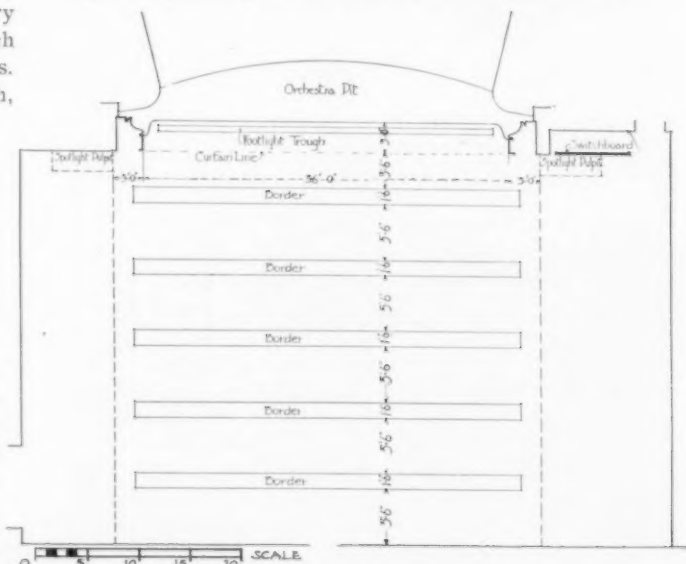
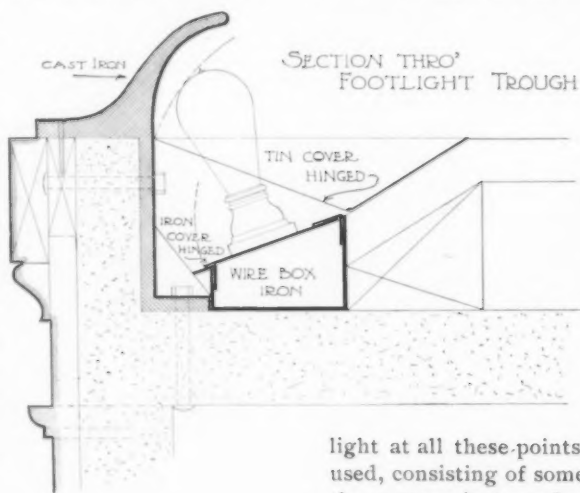
Most of our theaters are now equipped for moving picture machine connections. There should be pro-

vided a circuit of not less than fifty amperes' capacity, carried to the rear of the balcony to a plug outlet.

It will be readily seen that an equipment of this sort calls for a total number of lights on the stage, reaching as high as ten thousand lamps in some cases, and necessitating a very heavy consumption of electric power. It will also be appreciated at once that the load would be a varying one, as the lights might be turned off and on in a twinkling, and a thousand amperes thrown off or on without any notice. A load of this description would be very trying to an isolated plant. Consequently, in nearly all of our city theaters the current is supplied by the Edison Company as being more regular and having a greater reserve under sudden exigency. The fluctuation in the amount of current required is shown by the annexed diagrams, the current being taken from readings during different plays.

The switchboard required to control all this electricity is necessarily quite complicated. Each color on the foots and borders is on two separate switches; there is a separate switch for the bunch lights and for the arc lights on each side, and also for the spot lights on each side. It is customary, also, to control all of the lights of the auditorium from the stage switchboard, these lights being lowered just before the curtain is raised. All the switches must also be ganged together in such way that any group of lights in the house or in any part of the stage can be turned on or off simultaneously. Furthermore, it must be possible to control absolutely the intensity of the

light at all these points. For this purpose dimmers are used, consisting of some form of rheostat through which the current is turned, cutting down the efficiency of the lights and consequent illumination. These dimmers are



TYPICAL STAGE PLAN, FOR LIGHTING.

usually for a three-wire circuit, and the dimmers themselves have to be ganged together. In the best equipments there would be two separate dimmers for each border and for each color on each border, and for the foots as well. And these dimmers must be so arranged that one set can be turned up while the other is being turned down, and moved so carefully that there will be no sudden drop in the light. It is customary, also, to put all the house lights on a dimmer and drop them gradually, rather than turn them off abruptly.

The construction of stage switchboards is a specialty which is being constantly improved, and the best board to-day may be out of date in a very few years. There are at present several general types in use. Quite commonly, the dimmer contacts are all exposed on the face of the board, and jack-knife switches are used; but in the most up-to-date board nothing appears on the face of the panel except lever handles, which operate by rods and by gearings to control the dimmers and the switches, all of which are on the back of the board so as to show no sparking. A form of board has been devised in which the entire control is by a bank of push buttons, connected either electrically or pneumatically to the direct control of the switches and the rheostats. The latter board is the ideal one, as it is extremely compact, and can be operated with ease by a single person, but it has not yet been perfected in such manner that it can be depended upon.

As a precaution, all main circuits on the main switchboard should not only be fused but should be equipped with circuit breakers. And every board should be equipped with a volt meter, wired to use as a ground detector, and should also be fitted with a recording ammeter. Both of these devices would be pretty sure to save their own cost in less than one year by the stoppage of leaks and reduction of waste.

The switchboard is usually located on the back of the proscenium wall at one side of the curtain opening, the electrician standing in the line of the first entrance, where he can see the stage. He is obliged, of course, to depend largely upon cues in changing the lights and can not rightly judge of the stage effect. In the Metropolitan Opera House, New York, the first entrance is left entirely clear on each side, the switchboard being located in the basement under the center of the front of the stage.

The electrician has a stand in the center of the footlights, where a shallow screen a few inches high and hardly wider than one's head allows him a full view of all of the stage without his being visible to the audience. Right at his hand is a master wheel controlling the ganged levers of the dimmers, and the main switchboard is so near that he can speak to the two assistants who work the switches or individual dimmers as directed by him. This is an excellent arrangement in many ways but has the drawback of requiring the undivided attention of three men during the whole performance.

The switchboard of the Metropolitan Opera House is one of the largest in the country, controlling 11,488 16-candle-power lamps, besides motors, 44 arc pockets,

and 228 incandescent stage pockets; lamps and pockets distributed as follows:

4880—16 candle power lamps for auditorium illumination and entrances, halls, etc.

700—50 candle power whites in 8 borders, 1 foot and 2 proscenium lights.

468—32 candle power ambers in 8 borders, 1 foot and 2 proscenium lights.

468—32 candle power reds in 8 borders, 1 foot and 2 proscenium lights.

468—32 candle power blues in 8 borders, 1 foot and 2 proscenium lights.

150—32 candle power in transparent border light.

150—16 candle power in paint frame border light.

225—16 candle power in working lights on stage, in cellar and sub-cellar.

1025—16 candle power in dressing-rooms.

Sixteen quadruple stage pockets, for bunch lights (sixty-four pockets),

four colors, white, amber, red and blue, 15 ampere capacity each.

Sixteen quadruple stage pockets, for transparencies (sixty-four pockets), four colors, white, amber, red and blue, 15 ampere capacity each.

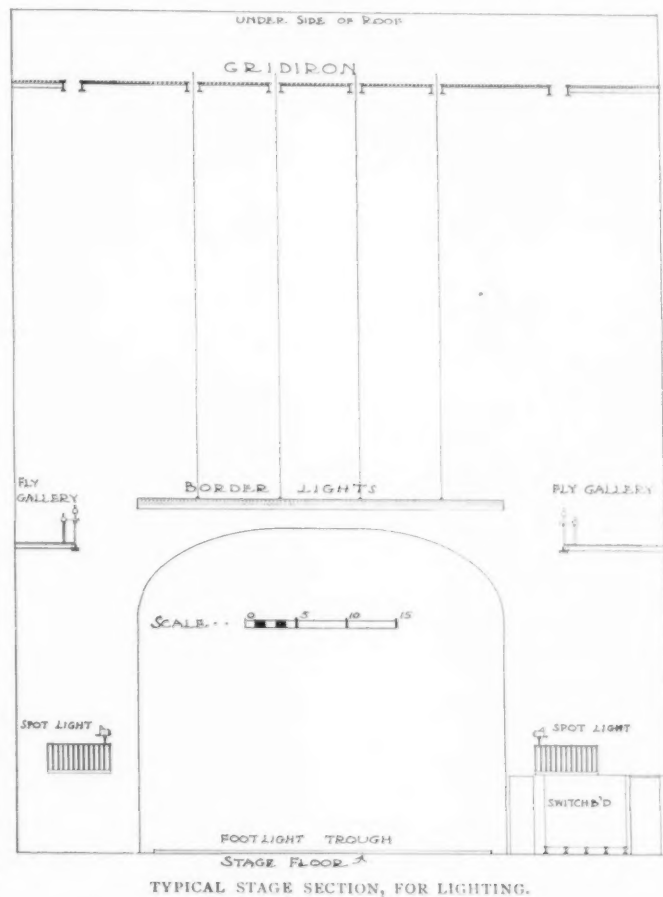
Sixteen single stage pockets, for arc lights on stage, 30 ampere capacity each.

Six single auto pockets, three for each bridge, for arc lights, 30 ampere capacity each.

Twenty-two single auto pockets, for arc lights, in fly floor, 30 ampere capacity each.

One hundred single stage pockets, for musicians' stands.

Switches are so arranged that almost any combinations of light and shade can be made and any gradation of tone



TYPICAL STAGE SECTION, FOR LIGHTING.

or color produced. There are one hundred and sixteen dimmers in all.

Stage lighting as an art, distinct from its scientific function, presents a very interesting study. A few illustrations will show some of the possibilities involved in this medium. In the play of "The Sleeping Beauty and the Beast" the lighting effects were quite as important as the scenery. In one of the acts, when Beauty pricks herself with the magic bodkin and falls into her long sleep, she drops on to a couch in the center of the stage and from each side a strong beam of white light is concentrated upon her, while the lights of the borders are dimmed successively from the rear, the footlights finally dropping out and leaving the stage in almost complete obscurity except for the startling relief of the effect in the center. In the play of "Ben Hur," a most striking and novel effect was produced in the last act. The stage was filled with some two hundred and fifty or three hundred people, the hero and his mother in the foreground waiting for coming of Christ. The people all turn toward the quarter from which the Lord is expected and a broad beam of light is thrown down from high up in the flies, at first so broad that it mingles with the general illumination of the stage. As the borders and footlights are slowly dimmed the broad ray of light becomes more evident. This is narrowed down very slowly while the borders and footlights are dimmed continually, until the light becomes a mere pencil of vivid illumination. As the lights on the stage are dimmed to the vanishing point the pencil of light is narrowed down until it disappears. Any one who has seen this light will appreciate how striking it is and how cleverly the supernatural is indicated rather than shown.

In a play which was produced at the Garrick Theater, Philadelphia, a short time since, sunrise effects were very cleverly simulated by sheets of gelatine colored an even gradation from deep blue green, through crimsons, reds, oranges, yellows, and a pale, clear white light, which were drawn upward in front of a box containing a bank of strong lights. The color illumination was thrown from each side upon the stage and in the course of a few minutes all the varying effects of dawn were reproduced in a most striking manner.

In the "Wizard of Oz," the effect of a cyclone is produced by dimming the lights on the stage and dropping a thin gauze curtain across the front, upon which is projected the illumination from a stereopticon in front of the

gallery, with a circular slide upon which are painted a dim representation of clouds and hurling masses of vapor and dust. The trick of course is obvious to anyone who is familiar with the theater, but the effect is carried out very cleverly, and the kaleidoscope and stereoscope are used in a variety of effects to help out stage delusions.

These illustrations might be extended almost indefinitely but they are sufficient to indicate in a measure the possibilities and scope of stage lighting. As was stated in the beginning, however, the science and art of stage lighting has yet to be perfected. Our effects are crude as compared to what we could imagine, and the whole system of footlights is radically wrong. Some attempts which have been made to produce a more rational illumination will be described under stage construction.

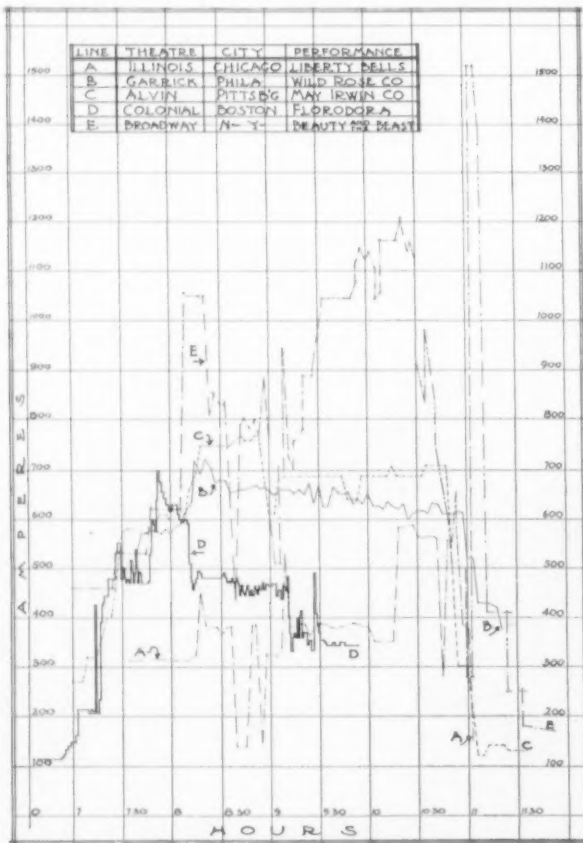


TABLE SHOWING ELECTRICAL CONSUMPTION IN AMPERES.

REPRESENTATIVE BARTHOLDT, whose Public Buildings Bill carries a total appropriation of \$23,000,000, favors a change in the method of appropriating funds for Government structures. Hitherto it has been the custom for the Treasury Department to deduct from the appropriation for a building the expenses of the Supervising Architect's Office. In this manner substantial sums have been lopped off the amount originally intended to be available for the buildings themselves, and greatly to the disappointment of districts where the buildings were to be located. Mr. Bartholdt proposes that appropriations for the buildings be left intact by the Treasury, and that the cost of designing and superintending them, as well as other expenses of the Supervising Architect's Office, be provided for in the appropriations for the maintenance of the Treasury Department.

A GREAT new boulevard one hundred and fifty feet wide has been approved for execution in Paris. It is to be absolutely straight and is to continue the Champs Elysées to the forest of St. Germain, ten miles distant. It will contain foot paths, wagon roads, electric tram lines and speedways for automobiles, but is to have no grade crossings. It is proposed to line a portion of the boulevard with model tenements for the small wage-earners. This improvement is supposed to be a part of that magnificent scheme for the further improvement of Paris which was recently laid by the Prefect of the Seine before the Municipal Council. It represents several years of study by experts, and is said to involve a total expenditure of \$80,000,000.

Armories for the Organized Militia—II.

BY LIEUT.-COL. J. HOLLIS WELLS.

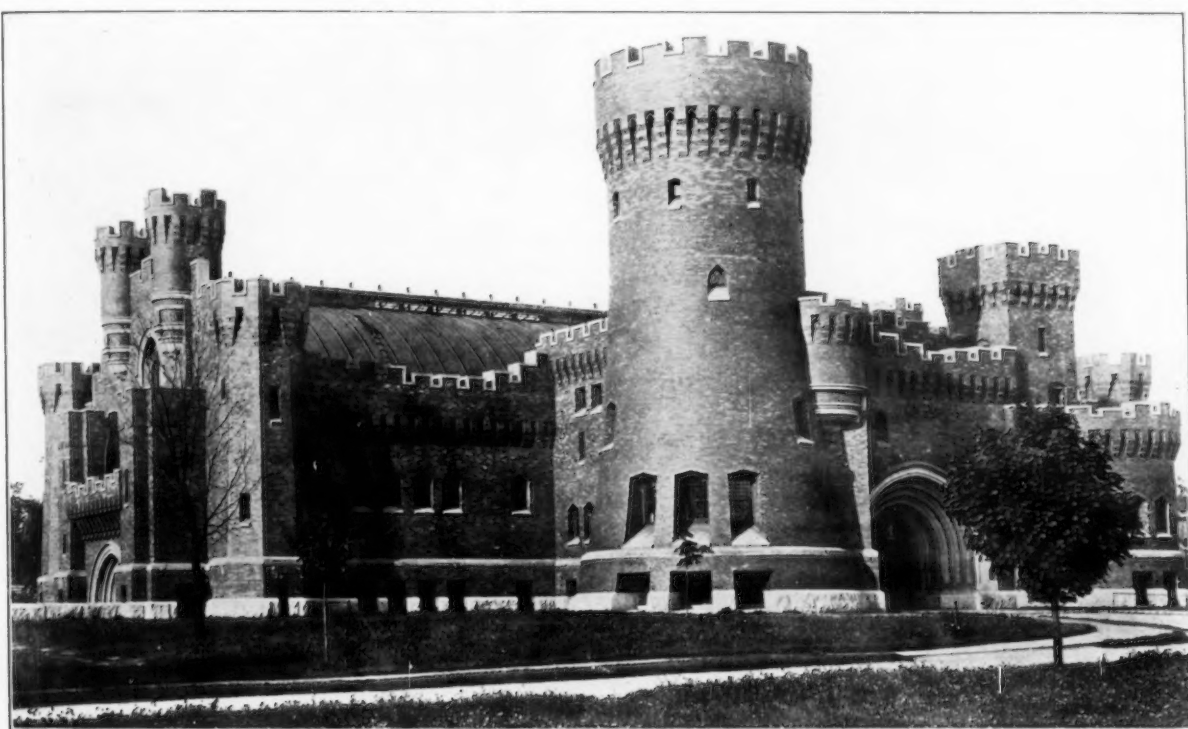
IN designing the floors for an armory, a live load of seventy pounds per square foot may be assumed except, of course, for the floor of the drill hall. The usual hollow tile construction between floor beams, 3 x 4 inch spruce sleeper and 2½ x 7/8 inch comb grain yellow pine flooring, makes a very satisfactory construction for the floors.

A very good roof covering for large span construction is of so-called plastic material, which, if properly laid over five-ply of heavy roofing felt and well carried up on the walls and parapets, will prove satisfactory and be absolutely watertight. Of course everything depends on

to heat this space to 60° F. when the weather outside is 0° F.

The lighting of the building is an important item and may be best and most economically accomplished by direct current generators located in the cellar.

For the drill hall, the system installed in the 71st Regiment Armory has proven very satisfactory. The area of the floor is about forty thousand square feet. Suspended from the lower chords of the trusses, at a height of about thirty-five feet from the floor, are seventy-five (75) chandeliers, each comprising five 4½-ampere arc lamps, with concentric diffusers



ARMORY AND GYMNASIUM, STATE UNIVERSITY, COLUMBUS, OHIO. Vost & Packard, Architects.

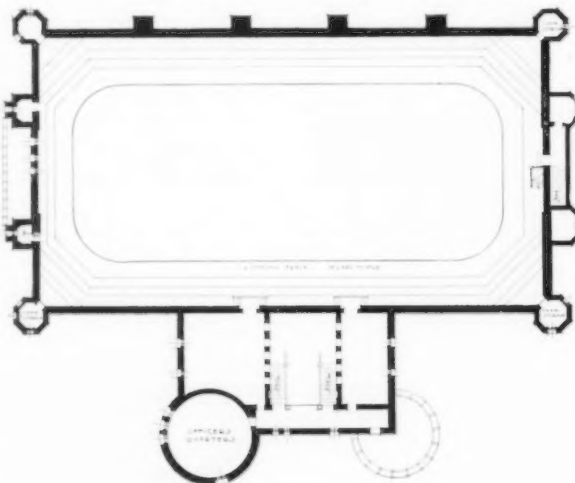
the workmanship around gutters, valleys and the flashings of the parapets, but with experienced superintendence and competent workmen, the old trouble with leaking roofs has been entirely obviated at very small sacrifice of time.

If possible, an armory should be equipped with a heating, power and lighting plant so as to be absolutely independent of all outside connections which might be destroyed in time of riot and insurrection.

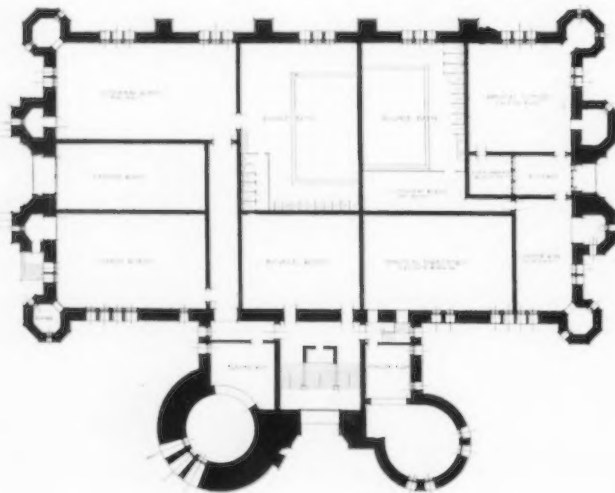
The heating plant may be economically installed on the one-pipe system, by running trunk lines through the cellar and taking off therefrom the vertical risers and branches to direct plain surface radiators. Heating coils should be run around the inside and just below the windows of the clere-story, so as to avoid draughts. The heating surface for the drill hall should be sufficient

such as are manufactured by the General Electric Company. Beneath the galleries, the regular system of carbon filament, 16-candle-power lamps are used to destroy shadow. The remainder of the building generally is lighted about thirty square feet of floor space to each 16-candle-power of lamps, and diffusion is obtained by the use of Holophane glass throughout. A more modern system could be installed in place of carbon filament lamps of high voltage, by using high efficiency lamps, either Tantalum or Tungsten, and a glassware for diffusion, treated by a process discovered by Major Zalinski, U. S. A., retired, which, although more expensive in first cost, is very much cheaper in operation, and in every way more satisfactory in general results. In designing fixtures for this type of lamp, however, it must be remembered that the lamp must hang vertically.

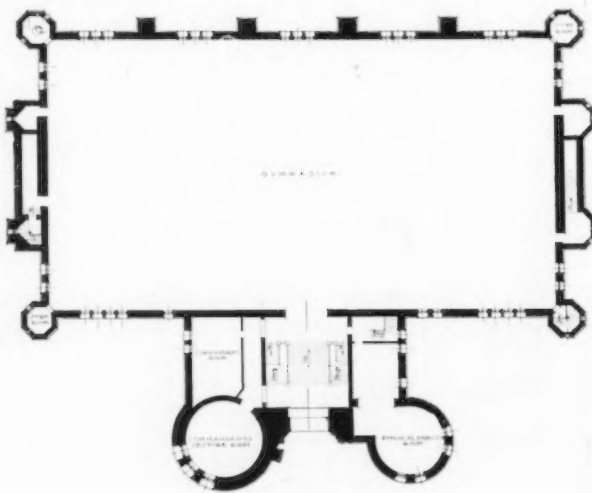
All plumbing should be substantial and the workmanship should be of the best, for the wear and tear is something appalling. An excellent method to obtain sanitary wash rooms and toilets for the enlisted men is to use absolutely nothing at all absorbent. The floors should be tiled with vitreous tile, the walls lined with white glass, having sanitary curves at base, and the partitions may be of slate. The wash room should contain at least forty (40) strong, porcelain basins, with both hot and cold water compression faucets. Water closets and urinals should be isolated from the wash room. The best urinal to use is of solid porcelain, similar to those now in use in the Hudson Terminal and other buildings in New York City. Water-closets should preferably be of the siphon jet variety, with hard-wood seats extra strongly attached and without covers, and all may best be flushed by some approved flushometer



GALLERY AND SECOND FLOOR PLAN.



BASEMENT PLAN.



FIRST FLOOR PLAN.

FLOOR PLANS, ARMORY AND GYMNASIUM, STATE UNIVERSITY, COLUMBUS, OHIO.

device. Avoid, by all means, cisterns and chain and pull devices.

The water supply is necessarily from sources outside the building. It would be well, therefore, to tap the street mains from two or three points, and carry these lines to a common point in the building, usually the suction tank, where one is required. Both hot and cold water should be supplied to all basins, slop sinks and showers.

In order to protect from fire, it is well to install an electric pump of a capacity of about two hundred gallons per minute, this pump is also necessary to raise water to the highest point of the building, into a roof tank. A careful study of the water supply system is well worth while, and its installation should be in the hands of an expert. There should be at least

two sets of fire lines running up through the building, with hose of sufficient length to reach all parts of the building.

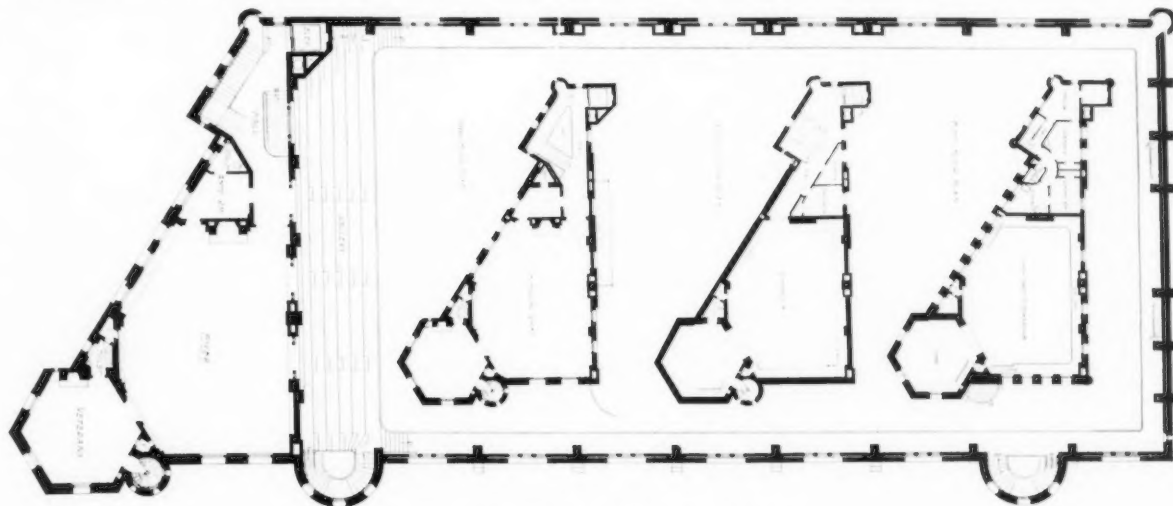
A plunge bath is a great convenience, and of course there must be an ample number of showers for both officers and men, six for the former and not less than thirty for the latter. The hot water system should, therefore, be carefully controlled with thermostats and mixing chambers, with thermometers attached to the showers. Proper dressing rooms adjoining the shower and plunge bath rooms are, of course, a necessity. The partitions between showers may be of thick, rough glass, supported in iron frames, and the walls and floors tiled.

These are some of the necessary accessories for a first-class armory building, but, of course, much depends on the ingenuity of the architect, or on the amount of money available, as to just

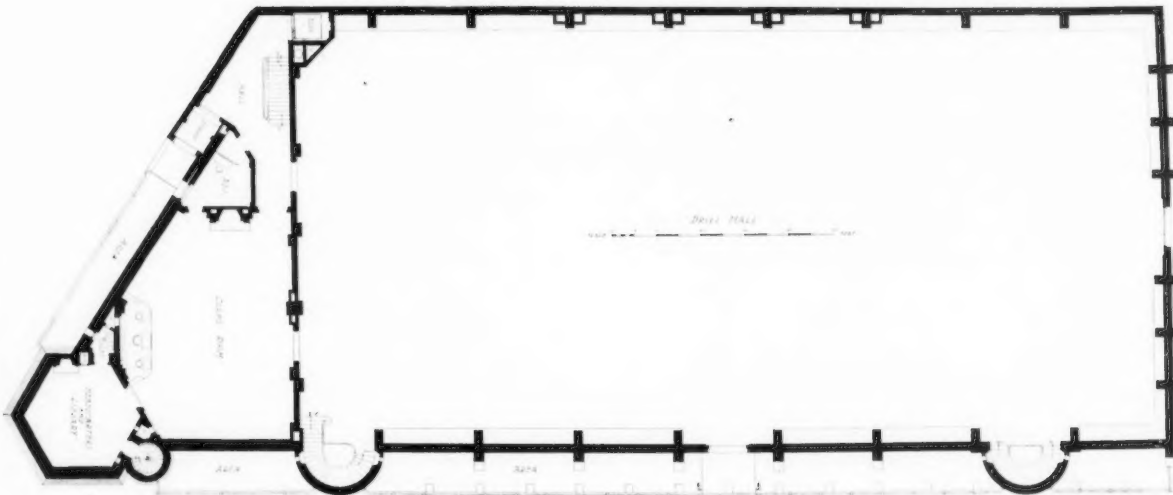
how much further one may go. These, however, are the general requirements for a well-equipped building.

The colonel of a regiment is its administrative head, and requires for his individual purposes two rooms, one reception and one office, the former, a formal room in which may be kept the colors and regimental trophies, this should be about 20 x 35 feet in size, but the office may be much smaller.

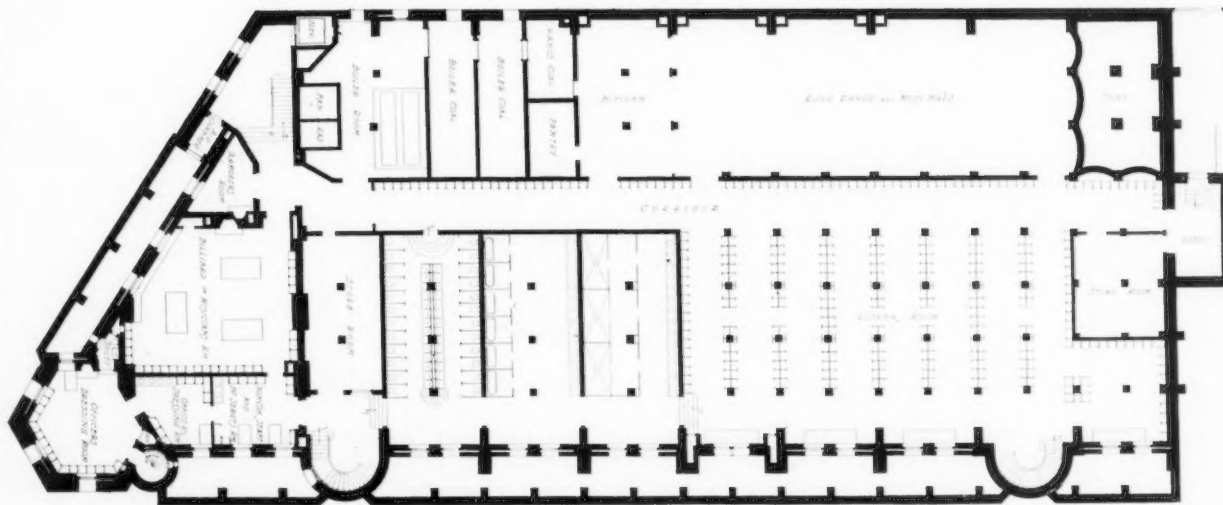
The colonel also requires a well-equipped toilet room and a large closet. The four adjutants should have their locker room adjoining the colonel's quarters. A room containing four hundred square feet will do for this purpose, but just off of this should be the adjutants' office. In this room is transacted the bulk of the civil and military business of the regiment. There are at times probably ten men on duty here, and officers and



SECOND, THIRD, FOURTH AND FIFTH FLOOR PLANS.

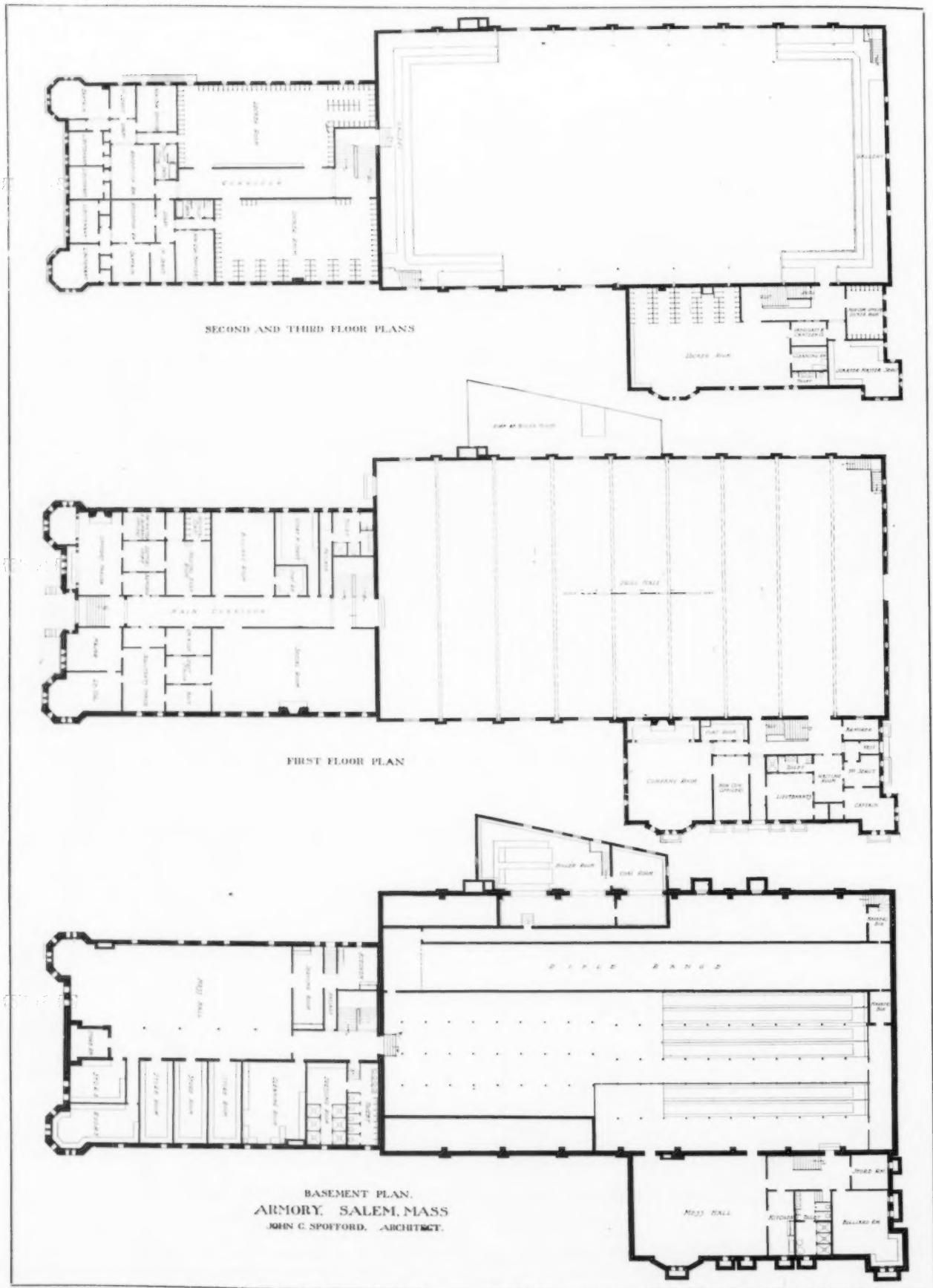


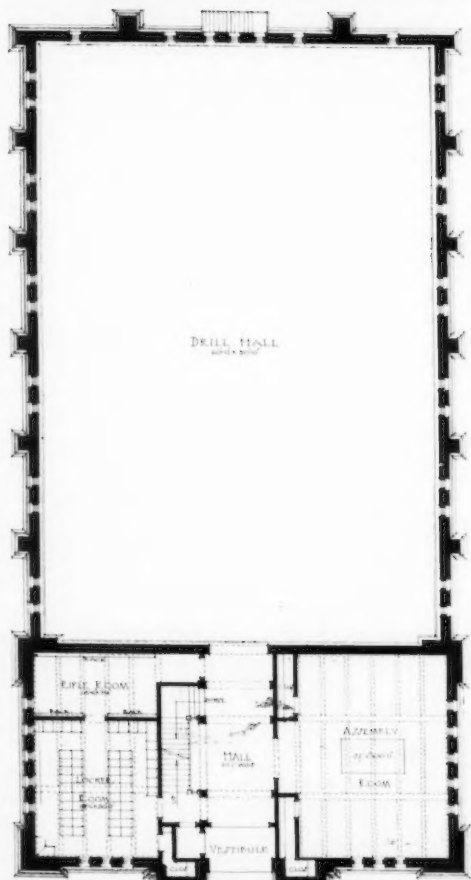
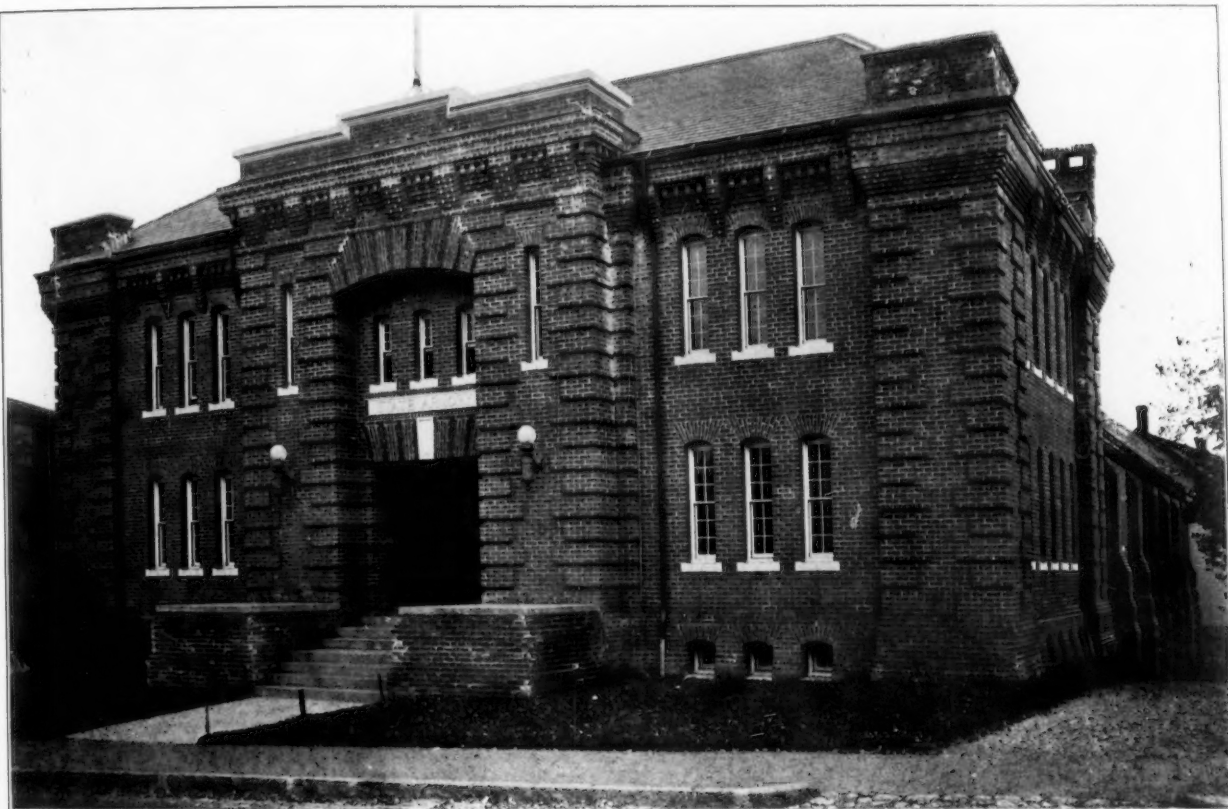
FIRST FLOOR PLAN.



BASEMENT PLAN.

ARMORY FOR FIRST CORPS OF CADETS, BOSTON.
William G. Preston, Architect.

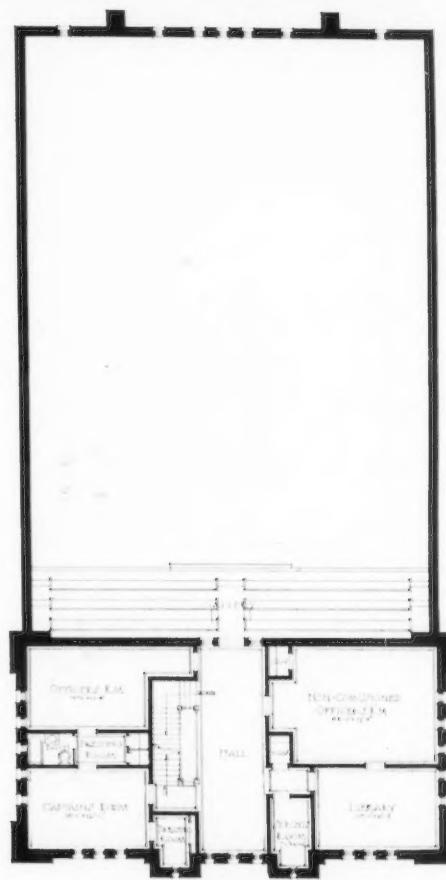




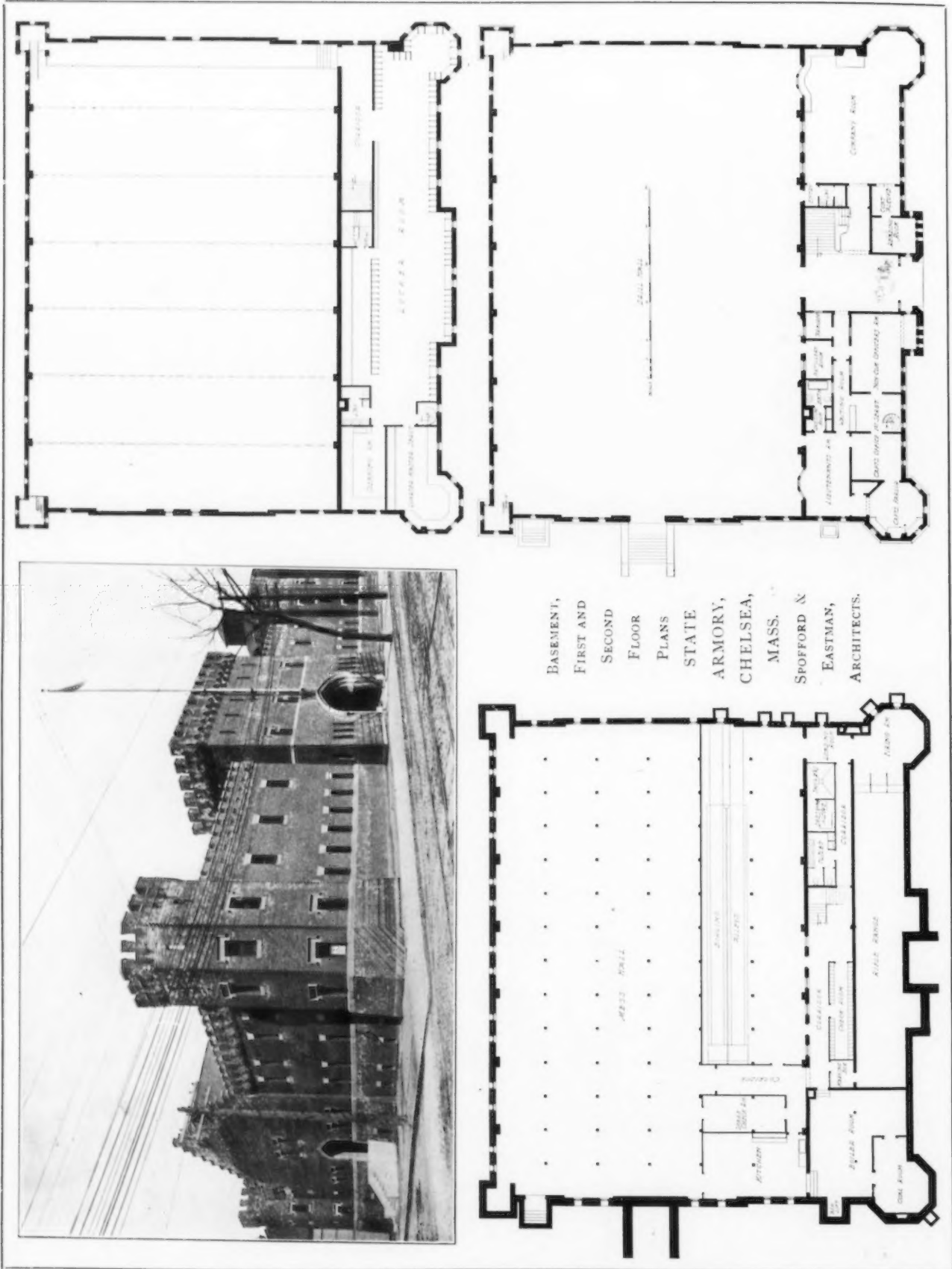
FIRST FLOOR PLAN.

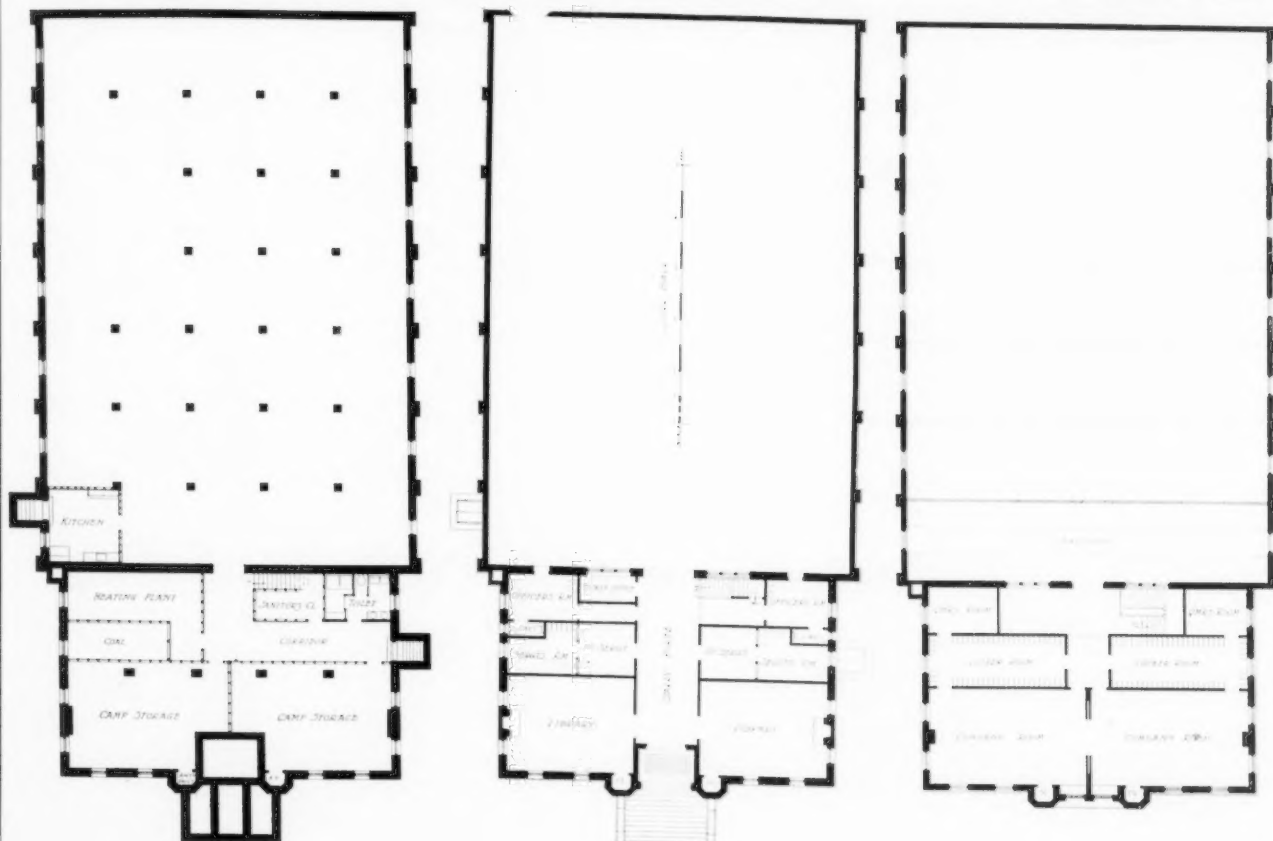
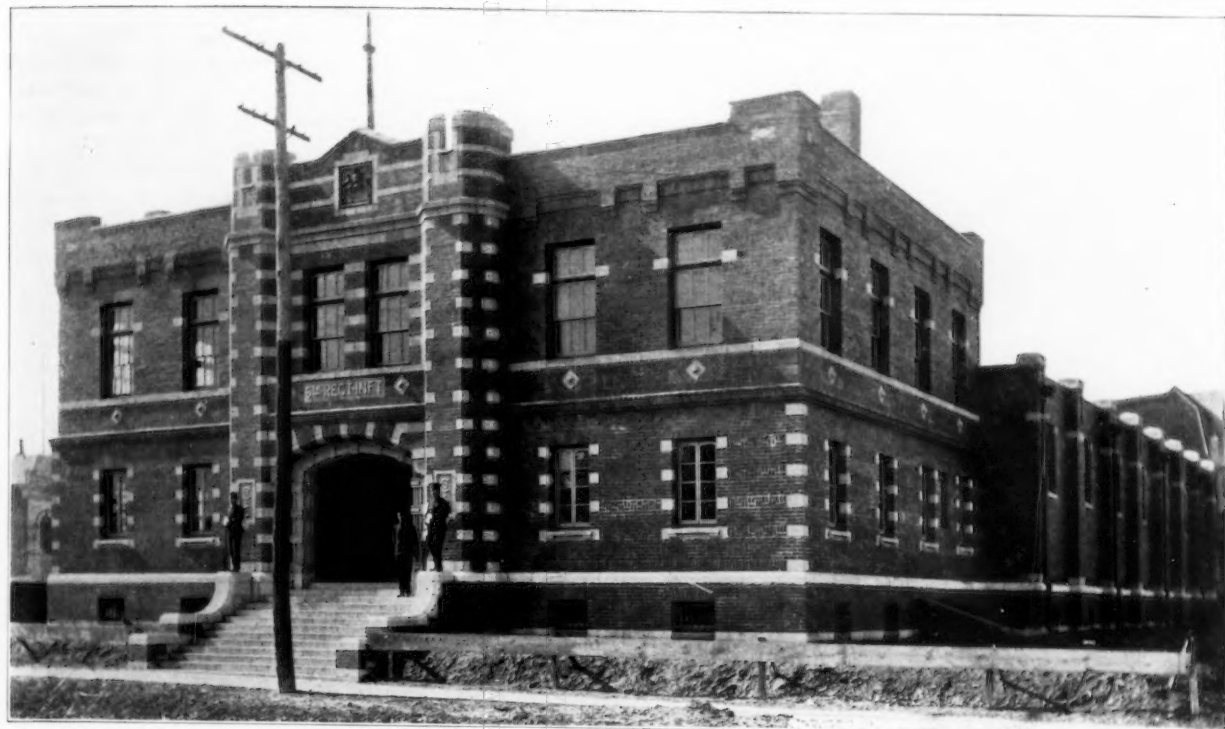
STATE ARMORY,
MARLBOROUGH,
MASS.

ALLEN & COLLENS,
ARCHITECTS.



SECOND FLOOR PLAN.





BASEMENT PLAN.

FIRST FLOOR PLAN.

SECOND FLOOR PLAN.

ARMORY AT CHESTER, PA. Price & McLanahan, Architects.

non-commissioned officers are in and out. Each of the four adjutants and each of the four sergeant-majors require desks, and the regimental clerk has his typewriter in this room. About twelve hundred square feet of floor space is, therefore, the minimum that should be allotted to the adjutants' office, for with all the file cases, safes and other paraphernalia, this room should not be cramped. This suite of rooms, colonel's and adjutants', should be on the same floor as the drill hall. The lieutenant-colonel requires a room about three hundred square feet, with ample closet room and toilet. This room, for convenience sake, should adjoin the colonel's reception room.

The board of officers' room may be placed on this floor, and this should be a show room, of about fifteen hundred square feet of floor space.

The three majors require two rooms, one containing about three hundred square feet of space, and a locker and dressing room of about two hundred square feet. Each company should have three rooms: a parlor, a locker room and a small store room. In order to describe a well-designed armory, from the standpoint of a militia man, it might be well, perhaps, to refer again to the new armory of the 71st Regiment, N. G., New York. The site is particularly a fortunate one, because Thirty-fourth Street is some seventeen feet higher in elevation than Thirty-third Street, so that it was possible to place the drill-room floor about six feet above the level of Thirty-fourth Street, and have two stories below. In these lower stories are located the company parlors, locker rooms and

store rooms. The parlors are 21 x 42 feet and are located on the floor immediately under the drill floor. In wide corridors off the company parlors, the rifles are kept in oak racks, which have heavy plate-glass sliding front that can be kept locked. The line officers' locker, dressing and toilet rooms are also on this floor, as well as the offices of the quartermaster, the library, recreation rooms and the store rooms for the companies. These store rooms are interior, and are ventilated at the top into the corridors, into which fresh air is driven by means of a fan. The quartermaster's office is divided into three parts, one his private office, about 10 x 20 feet; the office of the battalion quartermasters, 10 x 20 feet, and a general room of about one thousand square feet, in which the quartermaster sergeants handle the clothing supplies, and have their desks, closets and other appurtenances. The library is 28 x 47 feet in size, and is well furnished with bookcases, tables, comfortable chairs and divans,—each company parlor and the library has a fireplace.

The recreation room is really a mezzanine gallery, overlooking the gymnasium and is about 3½ x 126 feet.

At one end are located six billiard and pool tables, and at the other end games may be played and the men served with soft drinks and cigars.

The gymnasium is two stories in height and is about 35 x 80 feet and opens directly into the theater, which is 35 x 68 feet, so that both rooms may be used in conjunction.

This theater has a gallery. There is an entrance direct from the street into a lobby, off from which are hat and coat rooms and toilets. Immediately adjoining the gymnasium are four bowling alleys of regulation length. The company locker rooms are located on this lower floor, immediately under the parlors, and are each entered either from the corridors or down a flight of stairs from the parlor. A completely equipped kitchen with ranges, refrigerator boxes, steam tables, soup kettles, coffee urns, etc., is located here, as are also the showers, toilets and wash rooms for the men, and the large store rooms and work shops for the regiment, all of which are fully equipped.

The boiler and engine rooms are also located on this floor, as are also the ventilating fans and motors, which supply fresh air to the corridors and exhaust from the rifle and pistol ranges, which are located in the extreme easterly end of the two lower stories.

A description of these ranges is in order. There is the standing range and the prone range, which is mezzanined above the landing. At each range there are six targets on a line.

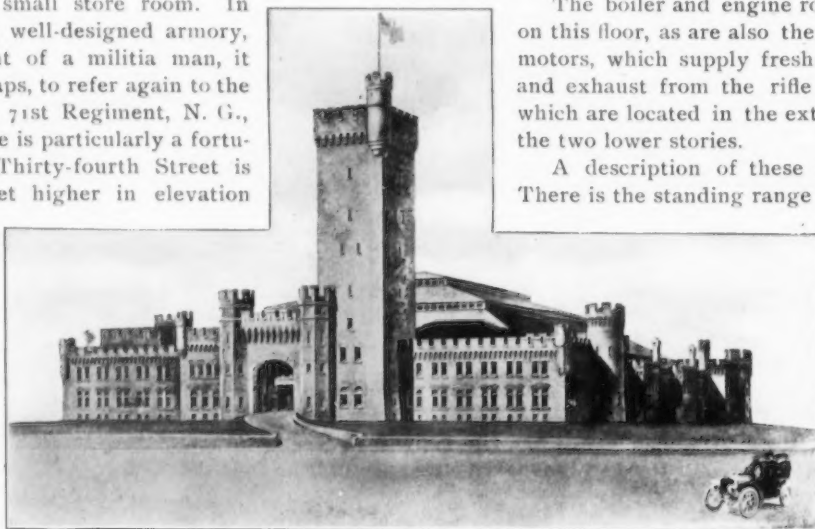
A twelve-inch solid brick wall divides the gymnasium and the theater from the ranges, which are about one hundred and sixty-six feet in length,

from the firing point to the targets. Heavy steel plates protect the ends and the ceilings wherever necessary, and by means of inclined steel plates with apertures in them stray shots are held from passing down the range.

At the extreme end of the range beyond the targets are located twelve bullet catchers 4 ft. 6 in. in height each. These catchers are made of half-inch steel plates bent spiral in shape, so as to catch the bullets and allow them to drop easily into pockets beneath.

In front of the targets are built masks of 10 x 10 inch spruce timbers, with openings through sheathed with two-inch spruce planking spiked to the timbers. The floors of these openings and masks extend over the markers' pit up to the target frame so as to form a platform. The object of these masks is two-fold: to protect the markers in the pits, and to prevent ricochet shots from striking other targets than the one the firer intended.

The frames for targets are of heavy spruce timbers and have white pine pulley stiles and target frames with



SIXTY-FIFTH REGIMENT ARMORY, BUFFALO.

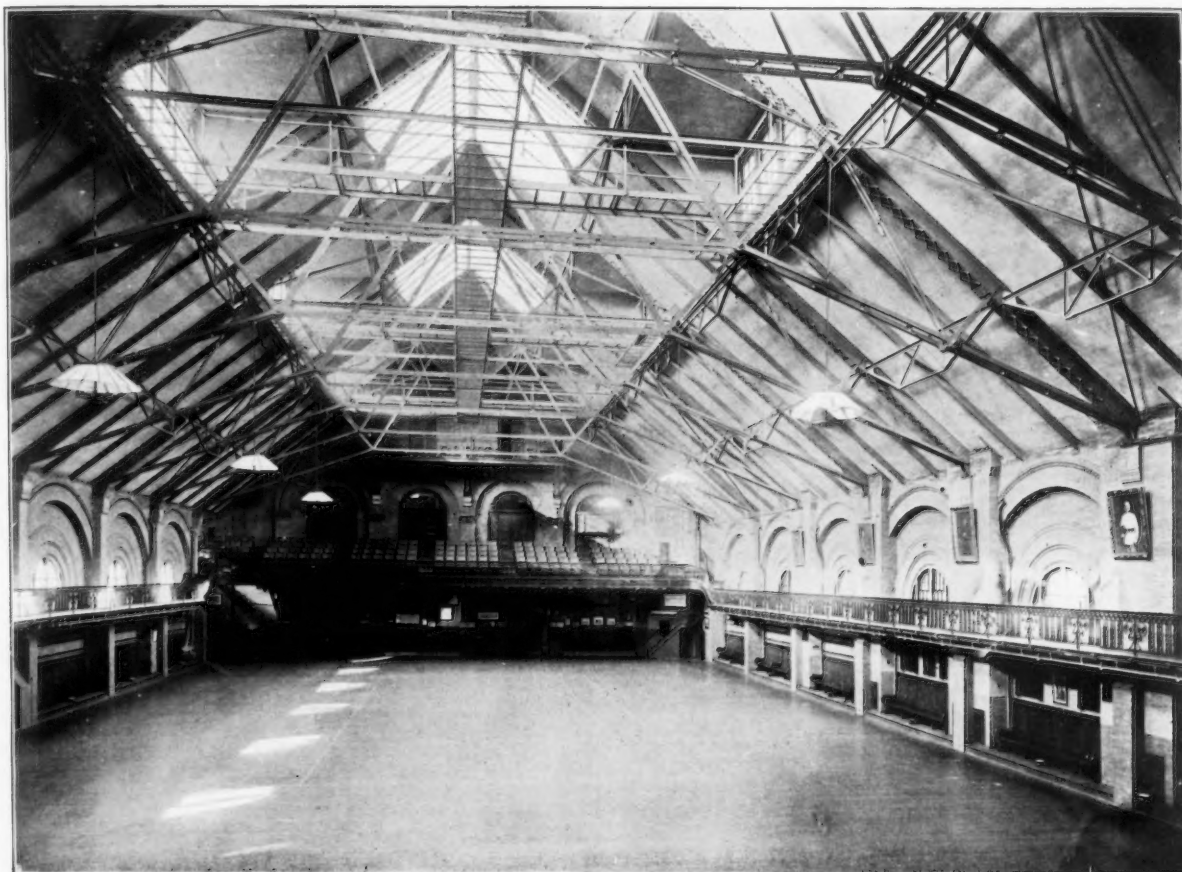
George J. Metzger, Architect.

pulleys and cords. Each target has a double frame, one to counterbalance the other, so that when one is up the other is down. These frames must be accurately set and are locked in place automatically.

At the firing point there are ash partitions with splayed openings and hinged shutters. In these partitions also are the holes and boxes for used ammunition, brackets and apertures for the stationary telescopes, sliding partitions which may be used to form compartments separating one shooter from the other. The walls at the firing point are sheathed with ash. Just beyond the partition above described and about twenty feet toward the targets there is erected a mantlet made of sheets of tin

of his telescope, spotting his own shot, but the value of the shot is conveyed to the scorer by means of a very ingenious contrivance, the basic patents of which are controlled by the Western Electric Company. In this particular case one man scores for six.

In the pit there are five push buttons for each target, and these buttons operate a small lamp which illuminate vari-colored small discs, which are fixed in brass plates. There are six of these plates and five discs in each plate, each disc corresponding in color to the marking disc used in the pit. These plates and discs are all contained in what appears to be an ordinary roll-top desk. At the moment the marker presses the button in the pit a small



DRILL HALL, ARMORY FOR FIRST CORPS OF CADETS, BOSTON. William G. Preston, Architect.

soldered together and fastened to 6 x 6 in. hemlock studding. This tin mantlet has apertures corresponding to the openings in the partition at the firing point. Between this partition and the mantlet are placed the ducts which ventilate the firing point. The targets are brilliantly lighted by electric lights and reflectors. At the firing point each man controls his own light. By means of telephones the scorer may communicate with the marker.

A most interesting system of marking has been adopted with most satisfactory results. After a man has fired, the target is changed, the shot marked in the usual way, by means of a disc, the man firing, by means

lamp is lighted at the firing point, and this light continues to burn until the scorer pushes his button, which puts out all lights on this particular target and indicates to the man firing and to the marker that the shot has been scored and the target cleared. This entire apparatus is operated by a small motor generator set, and is comparatively simple and most satisfactory in operation.

The pistol range is located above the rifle range. It has simply six lines of wires, which are to all intents and purposes trolleys on which paper targets can be made to travel back and forth.

This range, too, is protected at all points by heavy steel plates.



HOUSE
WINCHESTER, MASS.
ALLAN EDWARD BOONE,
ARCHITECT.



A List of Standard Architectural Books for Offices and Public Libraries.

BY EDWARD R. SMITH.

(Reference Librarian, Avery Architectural Library,
Columbia University.)

[It is the intention in this series to give a list of elementary and fundamental books on architecture that architects, the younger men especially, who contemplate the starting of a library, and librarians who wish to add an architectural section, may be enabled to obtain easily data which will be helpful. The parts of the series will be published on two sides of one leaf of THE BRICKBUILDER each month and so arranged that the leaves may be easily lifted for separate binding.

The measurements of books will be given according to the metric system. Key to description of books: .23 x .16 x .082—length, breadth, thickness; 14 + 1443 p.—number of pages; ill.—illustrations in text; pl.—plates. The prices are those given at the date of publication with certain easily recognizable exceptions.—EDITORS.]

THE professional bibliography is large. A broad discussion would be interesting, and especially of the monumental works which have been developed in every country, and which are most desired by the collector in the end. These give the greatest charm and value to an architectural library; but before they are reached, the student should become familiar with the less pretentious, but still important, books which may properly underly the practical working of the profession. Various excursions might be undertaken with profit; but for the present it will be wise to bind our steps to a narrow and well-trodden path.

Some works of the standard elementary classes have come into the market recently; but, for the most part, the titles in our list are old friends, which have proved their value by long acquaintance. They are inexpensive also, and within the reach of almost every office and library.

DICTIONARIES.

¹ Joseph Gwilt, F. S. A., F. R. S. A. (b. 1784 d. 1863). *An Encyclopædia of Architecture, Historical, Theoretical and Practical*; illustrated with about seventeen hundred engravings on wood. Revised, portions rewritten and with additions (in 1888) by Wyatt Papworth, Member of Council of the Royal Institute of British Architects, etc. London & New York; Longmans, Green & Co.; 1899; 8° (.23 x .16 x .082), 14 + 1,443 p., ill., 1 pl., cloth, 21s.

Gwilt's Encyclopædia is the earliest attempt to discuss in one volume all the elements of architectural information. The last of its nine editions, that of 1888 reprinted in 1899, is too early to include all information now needed; but in general matters, which underly all architecture and which do not vary greatly with time, Gwilt is useful. The little treatises which it contains on geometry, perspective, conic sections, and especially that on shades and shadows, a matter in which Gwilt was much interested, may save one the trouble of carrying special books on those subjects.

² Russell Sturgis, A. M., Ph. D., Fellow of American Institute of Architects; and many Architects, Painters, Engineers, and other expert Writers, American and Foreign. *A Dictionary of Architecture and Building, Biographical, Historical and Descriptive*. New York and

London, the Macmillan Co.; 1901-02 (Later ed., 1905); 4to (.27 x .21 x .05), 3 vol., ill., 106 pl.; cloth, \$18.00 net.

This book is, undoubtedly, the most convenient in its field. Its editor has especially preserved his sense of proportion. Occasionally an article is allowed the importance of a monograph, but for the most part one finds under the several headings simply so much as is needed for immediate service and is not forced to make his own abstractions. Space is thus left for an abundance of entries, which cover the field of architectural inquiry most completely. "Fitness for ready consultation" is secured by many cross references.

The Architectural Publication Society (founded in 1848, dissolved after the completion of the Dictionary). *The Dictionary of Architecture*. London, 1853-92; small fol. (.38 x .28 x .06 to .035); 8 vol. 2,300 p., text, ill., 223 pl. Detached essays and illustrations issued during the years 1848-52. London, 1853; small fol. (.38 x .28 x .03), various paging, ill., 28 pl. The entire work, including the "Detached Essays and Illustrations," was issued originally to subscribers only, in parts for £21. All parts not distributed were destroyed. A copy was offered by Batsford in 1900 for £17 10s. The Architectural Publication Society's Dictionary is the most extensive book of its class. Although intended to deal thoroughly with English matters it is perfectly general. An important feature is the distribution of abundant bibliographies, which show extensive research in periodical literature. The "Detached Essays and Illustrations" consist of a series of extended articles which are sometimes bound in place with the other material.

Thomas Dinham Atkinson, A. R. I. B. A., Architect. *A Glossary of Terms used in English Architecture*. London, Methuen & Co., 1906; 12mo (.17 x .11 x .025), 24 + 320 p., 265 ill., cloth, 3s. 6d. net.

This little volume, illustrated by pen sketches, may well be given a place on the shelves of a limited library.

Paul Planat, Director of Construction Moderne and author of many works on architecture, etc. *Encyclopédie de l'Architecture et de la Construction*. Paris, Dujardin et Cie. No date, 4to (.27 x .2 x .05), 6 vol. in 12; ill., 640 pl., 360 fr. unbound.

This book is loosely made up in the characteristic French way and its articles approach occasionally to the type of monographs, but the plan of the work is broad, and its tone decidedly modern, much space being given to utilitarian and structural matters, with which the editor of Construction Moderne is especially familiar. The illustrations are sketchy reproductions of more careful originals, but they are abundant and well selected.

HISTORICAL MANUALS.

Alfred D. F. Hamlin, A. M., Professor of the History of Architecture, Columbia University. *A text-book of the History of Architecture*. London and New York; Longmans, Green & Co., 5th ed. 1904; crown 8° (.195 x .14 x .033), 25 + 453 p., ill., pl., cloth, \$2. (College Histories of Art.)

Professor Hamlin's compact history covers the entire field with balance and regard for proportion. The chapter form is good for his purpose, a bibliography including both general and special works, a discussion of

general development, a discussion of typical buildings, and finally a larger list of monuments. The style is noted as a model of clear condensation.

James Fergusson (b. 1808, d. 1886). A History of Architecture in all countries, from the earliest times to the present day. 3d ed. R. Phené Spiers, editor. London; John Murray, 1891-99; Vol. 1, 1893; 8° (.23 x .17 x .056), 5 vol., ill., 5 pl., 2 maps; £6 4s. Vol. 1-2, History of Ancient and Medieval Architecture. Vol. 3, History of Indian and Eastern Architecture. Vol. 4-5, History of the Modern Styles of Architecture.

The "History of Architecture" is still the most useful historical manual in any language. It is a source of constant wonderment that the author managed to study critically so much building; and still more, that he collected such an unlimited supply of excellent illustrations, all laboriously engraved on wood. Phené Spiers's revision has brought the old book pretty well up to date.

François Auguste Choisy: Professor of Architecture at the École des Ponts et Chaussées, Paris, and author of many works on architecture. Histoire de l'Architecture. Paris, Gauthier-Villars, 1899; 8° (.24 x .17 x .04), 2 vol., 866 ill. by J. Sulpis; 40 fr. unbound. A most unique historical manual is this of Choisy, dealing entirely with the development of types, and illustrated exclusively by diagrams drawn in geometric projection. In a work like this the individual monument counts for little. The principles underlying groups of monuments and their characteristic forms are under consideration.

Banister Fletcher, F. R. I. B. A. (b. 1835 d. 1899). Late Fellow of, and Professor of Architecture in Kings College, London; and Banister F. Fletcher, A. R. I. B. A. A History of Architecture on the Comparative Method for the Student, Craftsman and Amateur. 4th ed. Revised and enlarged. London, B. T. Batsford; New York, Scribner, 1901; 8° (.22 x .15 x .06), 42 + 1 + 521 p., 256 plates comprising 1,300 illustrations. For the use of professors, lecturers and others the 128 plates of drawings of construction and monumental detail contained in this work are issued as large lecture diagrams (40 in. x 27 in.), and lantern slides of the whole of the plates are also obtainable. Particulars of these may be obtained from the author.

The Fletcher manual has a more definite form than books generally of this class. Each chapter, or rather subject, is cast according to a prearranged "System of Classification": 1. Influences, 2. Architectural Character, 3. Examples of Building, 4. Comparative, 5. Reference Books. The fourth heading is quite interesting, showing in tabulated form the changes which occur in architectural motives from period to period.

Russell Sturgis, A. M., Ph. D., F. A. I. A., editor of a "Dictionary of Architecture and Building." A History of Architecture; Vol. 1. Antiquity. New York, the Baker Taylor Co., 1906; 4to (.27 x .18 x .048), 23 + 426 p., frontispiece, ill., pl.; cloth, \$5.00. Mr. Sturgis's History of Architecture, of which only one volume has appeared, promises to equal his Dictionary in usefulness. It will replace the old treatise of Fergusson, than which, of course, it is more scholarly and comprehensive. The photographic cuts furnish a rare body of illustration.

Salomon Reinach: Apollo, Histoire générale des arts plastiques. From the French by Florence Simmonds; The Story of Art through the ages, an illustrated Record. New York, Charles Scribner Sons, 1905; 8° (.215 x .14 x .05), 11 + 316 p. nearly 600 ill., cloth, \$2.00.

Reinach's Apollo seems too general to be mentioned in an architectural bibliography; but the book is so good and the architectural part so considerable that the student may wisely add it to his collection.

GENERAL MANUALS.

John Beverly Robinson, Member of the American Institute of Architects. Architectural Composition. New York, D. Van Nostrand Co., London, B. T. Batsford, 1908; 8° (.22 x .16 x .025), 11 + 234 p., ill.; cloth, \$2.50.

Mr. Robinson's discussion of architecture along the lines of simple principles stands almost alone in the literature of architecture. It is concise, intelligent and should be quite indispensable in an architectural library.

Julien Guadet (b. 1834, d. 1908), Inspecteur générale des bâtiments civils, Professeur et membre du conseil supérieur à l'École des Beaux-arts. Éléments et théorie de l'Architecture; cours professé à l'École nationale et spéciale des Beaux-arts; Ouvrage honoré d'une souscription du ministre de l'instruction publique et des Beaux-arts, Paris. Paris, librairie de la Construction Moderne, 1902-05; 4to (.27 x .20 x .04), 4 vol. ill. pl.; 100 fr. unbound.

Prof. Guadet's work should certainly be translated into English. The architectural profession in America is becoming dependent upon it as upon almost no other book. It is a "complete body of Architecture" more fundamental and thorough than any yet published.

Eugène Emmanuel Viollet-le-Duc (b. 1814, d. 1879). Entretiens sur l'Architecture; translated by H. Van Brunt, second vol. by Benjamin Bucknall: Discourses on Architecture. Boston, James K. Osgood & Co., 1875-81, 4to (.26 x .18 x .045), 2 vol., 20 + 1 + 517 p., ill., pl.; cloth, \$10.00.

The "Entretiens" of Viollet-le-Duc may well take a place among our general works as a broad and thorough discussion of principles in all styles and periods. It is fortunate that we have such a good American translation.

Handbuch der Architektur, unter Mitwirkung von Fachgenossen, hrsg. von J. Durm, H. Ende, E. Schmitt und H. Wagner, various editions. Darmstadt, 1880-96; 8° (.27 x .19 x .04), ill., pl. Div. 1, Allgemeine Hochbaukunde; Div. 2, Die Baustile; Div. 3, Hochbau-construction; Div. 4, Entwerfen, Anlage und Einrichtung der Gebäude. Price altogether about \$186. More than 40 vols.; not yet completed.

Although the Handbuch der Architektur is beyond the reach of many of our readers, both on account of its language and price, it is mentioned as a valuable book of its kind; a glorified manual in which each chapter is developed into a special monograph by a specialist of standing. These monographs may be bought separately. Some of them have passed through several editions and might well be translated into English.

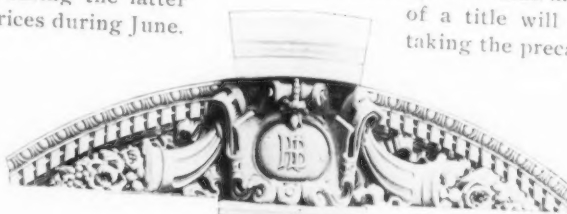
Editorial Comment and Miscellany.

THE cost of building has now been substantially reduced by a number of causes. Steel and iron have gone down, and, generally speaking, lumber is being sold for 10 to 12 per cent less than a year ago. General contractors are willing to take less profit than at any time within the last few years and subcontractors are taking work at figures to serve little else than to hold their working organization together. Although wages for labor are nominally the same, competition among mechanics to hold their places renders the labor better and, therefore, cheaper. From the "American Lumberman" is taken the following comparison of prices for building in 1907-08 representing actual figures obtained by a party who wished to build.

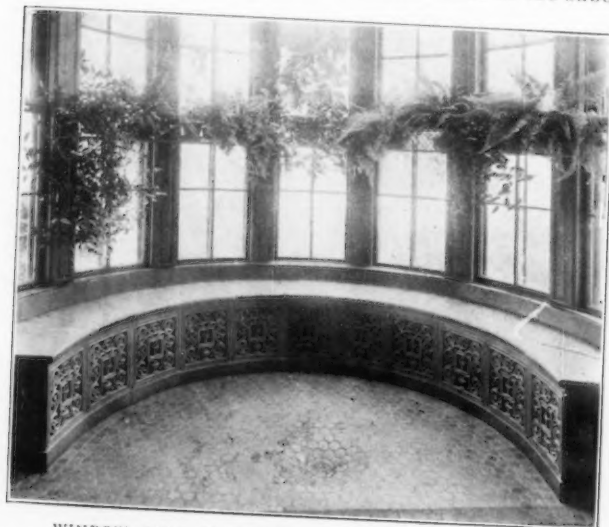
	1907	1908	Per cent of Decrease
Masonry and grading,	\$1,329	\$944	29.0
Plastering,	585	313	46.8
Plumbing,	640	500	21.9
Heating,	730	570	22.0
Painting,	530	400	24.5
Lumber	\$4 to \$6 a thousand less.		

The 1907 prices were made during the latter part of that year and the 1908 prices during June.

WITH the intention of aiding the transaction of real estate business in New York City and State the Legislature at Albany has passed the Torrens Land Title Registration Bill. This provides for the State to do what private companies have done since title insurance has been found necessary by the great maze of transfers made in the subdivi-



DETAIL BY SOUTH AMBOY TERRA COTTA CO.
J. Warner Allen, Architect.



WINDOW SEAT EXECUTED IN DULL GLAZED FAIENCE
BY HARTFORD FAIENCE CO.
Willard T. Sears, Architect.



GARAGE, CINCINNATI, OHIO.

Samuel Hannaford & Sons, Architects.

Exterior of White Mat Glazed Terra Cotta made and set by Atlantic Terra Cotta Co.

viding and development of congested districts. The scheme, which is already in operation in several states, is scarcely more than an experiment. The marketability of a title will only be increased by the owner's taking the precaution to register it on the statute

books, which in most cases he will not do; and, after all, the efforts of a private corporation to insure its patrons against possible loss will always inspire such confidence that private title insurance business will thrive whether there is state insurance or not. The cost of registering a parcel of land under the new law will be about fifty dollars.

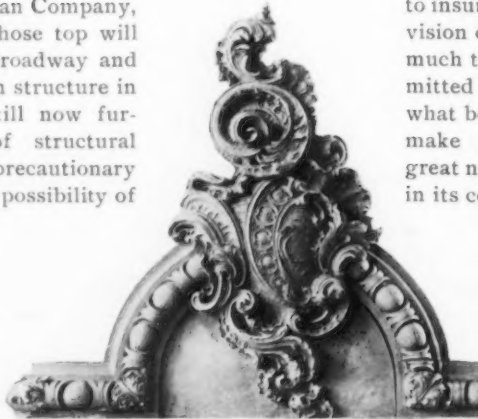
NEW York has followed the example of other cities in installing high pressure water mains. The inability of the Fire Department to cope successfully with conflagrations there has operated to maintain high insurance rates. The mains cover the district between West Twenty-Third, Chambers, West Broadway and the Hudson River which has hitherto been one of great menace to the city. The method of getting the water is interesting. It is supplied by the New York Edison Company, which is under contract to fill the mains with water at high pressure within three minutes after an alarm is given. The company is penalized \$5,000 for every minute's delay. As many as twelve of the enormous engines at the company's riverside power plants are coupled together and supply the pressure by which engineers declare the water can be thrown to the summit of the highest structure in New York.

IS there any limit to the skyscraper madness of New Yorkers? asks the *Boston Herald*. The Equitable Life Assurance Society, not to be outdone by their com-

petitors in business, the Metropolitan Company, are planning a 62-story building whose top will be 909 feet above the curb on Broadway and over 200 feet above the Metropolitan structure in Madison Square. Engineering skill now furnishes a reasonable guarantee of structural safety. Fireproof construction and precautionary devices for the elevators, reduce the possibility of interior disaster to a minimum. But there is an outside interest to be considered. What is the effect of the skyscraper upon the value of the adjoining property? What will be the atmosphere in which people on the lower levels must live, when the streets become narrow defiles between towering precipices of steel and masonry? Does business growth demand these abnormal structures, or is the public welfare being sacrificed to gratify an ambition to outdo one's neighbor's in spectacular architecture?

AT the annual conference of the American Library Association at Minnetonka, Minn., the "open shelf craze," as librarians call it, was considered. A great number of thefts due to this arrangement of books was reported. Not one objection raised against it, however, can be considered valid. Many of the libraries which have adopted the open shelf were never designed by their architects to have the books thus freely accessible to the public. Nearly all the thefts of books reported could have been prevented by the planning of aisles so as

to insure the attendant having proper supervision of all readers and visitors. There is much to be gained by the public being permitted to view the books themselves, to see what books exist on a given subject and to make comparisons between them. In a great national library, the value of which lies in its completeness, the open shelf arrangement is manifestly inapplicable, likewise it must not be adopted for collections of unusually valuable or handsomely illustrated works; but to render most serviceable the many thousands of books of ordinary form, the library should bring them into as direct contact with its public as possible.



DETAIL BY NORTHWESTERN TERRA COTTA CO.
Toledana & Wogan, Architects.

OFFICIAL building reports from some fifty leading cities of the country for the month of June, received by the *American Contractor*, New York, show quite distinctly that building operations are improving, the loss as compared with June, 1907, being only 15 per cent. Substantially the same cities reported a loss of 37 per cent for March, 33 for April and 19 for May of the present year, as compared with the corresponding months of last year. New York shows a loss of only 13 per cent, a gain of 35 per cent in Manhattan, being offset by losses in Brooklyn and the Bronx. The following figures show the percentage of gain in leading cities: Baltimore, 35; Birmingham, 57; Cincinnati, 5; Columbus,

only 13 per cent, a

gain of 35 per cent in Manhattan, being offset by losses in Brooklyn and the Bronx. The following figures show the percentage of gain in leading cities: Baltimore, 35; Birmingham, 57; Cincinnati, 5; Columbus,



NEW MUNICIPAL BUILDING, WASHINGTON, D. C.

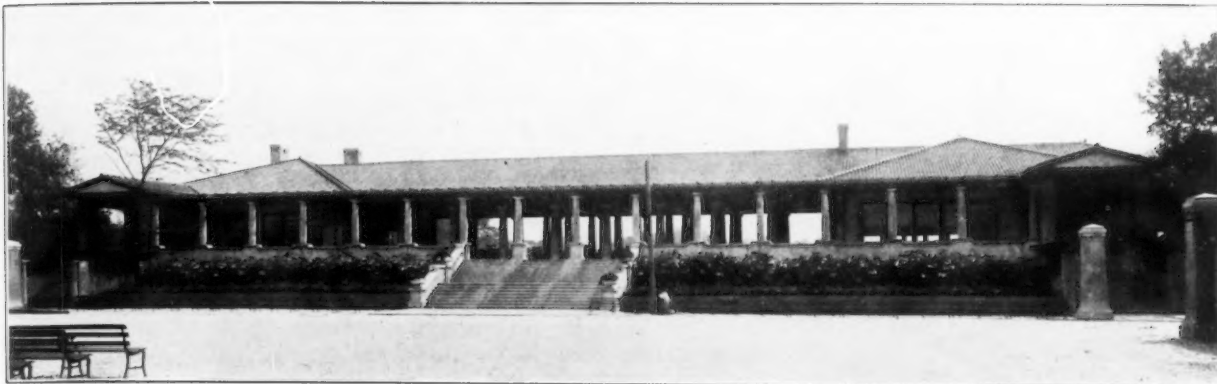
Cope & Stewardson, Architects.

Fireproofed throughout with Terra Cotta Hollow Tile by National Fireproofing Co.



HOUSE FOR MR. BLACK (CARTER, BLACK & AYERS).

Salt-glazed terra cotta blocks for foundation to first-floor beams; above that a heavily scored terra-cotta block. The illustration at the right shows the walls before the stucco finish was applied.



DOUGLAS PARK REFECTORY AND BOAT HOUSE, CHICAGO. W. C. Zimmerman, Architect.
Roofed with Green Glaze Tile made by Ludowici-Celadon Company.

34; Grand Rapids, 32; Milwaukee, 62; Omaha, 4; St. Paul, 43.

The percentage of loss in leading cities is: Buffalo, 11; Chicago, 6; Cleveland, 43; Detroit, 15; Hartford, 20; Indianapolis, 55; Louisville, 53; Los Angeles, 50; Minneapolis, 12; Memphis, 41; Mobile, 34; New Haven, 59; New Orleans, 32; Philadelphia, 5; Pittsburg, 47; St. Louis, 36; San Francisco, 32; Seattle, 2; Spokane, 53; Toledo, 54. Taking into account the circumstance that the presidential election occurs during the present year, the gradual decrease of total losses from 37 per cent in March to 15 per cent in June is decidedly encouraging.

The decrease in the price of structural steel seems to be producing an effect, notably in Manhattan, while the loss in Chicago is but trifling.

A COMPARATIVELY new problem for architects is suggested by the preparations to erect a huge clock on a roof-top in Jersey City, to serve as a beacon for travelers upon the river and harbor; also as an advertisement of the concern providing it. But why a roof-top? The dial of the huge timepiece is to be twenty-eight feet in diameter, thus exceeding by five hundred and forty-four square feet the area of the City Hall clock in Philadelphia, which has long held the world's record for size. That so large an object should be supported in a casual sort of way by a roof-top, shows a lack of comprehension of the architectural possibilities at hand. A dignified tower especially erected to support the clock would greatly add to the import and effect of the undertaking.

IN GENERAL.

In the competition for the Springfield, Mass., City Hall, eighty-three sets of drawings were submitted.

Edward Wanton Robinson of the Hartford Faience Co. has been elected a member of the Royal Society of Arts, England.

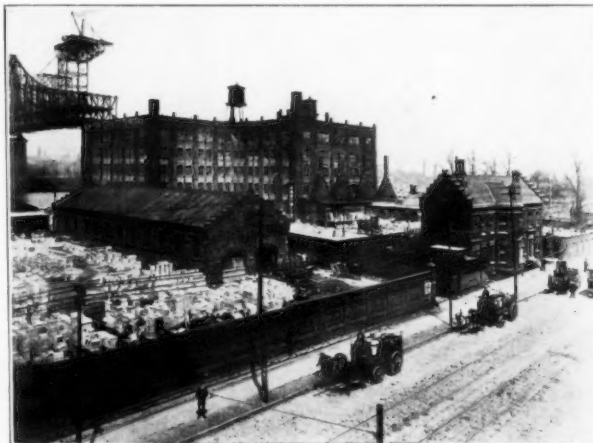
Louis Lenz, with H. C. Koch & Son, Milwaukee, Wis., has just returned from a trip devoted to study, through France, Germany and Italy.

Robert Brown, architect, for a number of years connected with A. H. Davenport Co., Boston, has resumed the practice of architecture with offices at 85 Devonshire Street, Boston.

The Architectural League of America will hold a competition to obtain designs for a seal. Two prizes are offered: first \$25, second \$10. For particulars apply to H. S. McAllister, 729 15th Street, N. W., Washington, D. C.

The St. Louis Public Library Board, of which John Lawrence Mauran is a member and Prof. F. M. Mann of Washington University, consulting architect, held a competition during April for the selection of architects for two branch library buildings. One was awarded to Mariner & La Beume and another to Hellmuth & Spiering.

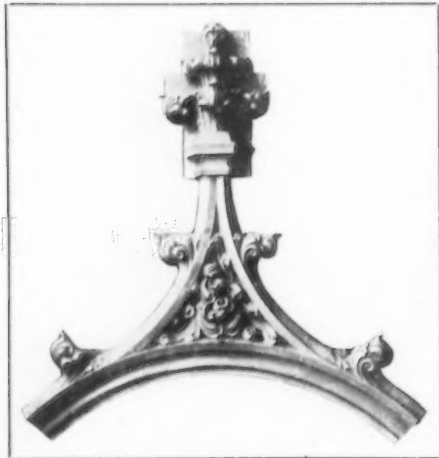
Of all the electric lighting schemes appearing in New York at night the Singer Tower enjoys the most novel and impressive. The structure appears amid a blaze of light which is supplied from below and from the surmounting cornice, many of the



WORKS OF THE NEW YORK ARCHITECTURAL TERRA COTTA CO.
RAVENSWOOD, LONG ISLAND CITY, N. Y.
Showing the New Suspension Bridge which crosses the East River at Blackwell's Island.



DETAIL BY WINKLE TERRA COTTA CO.
Widmann & Walsh, Architects.



DETAIL BY NEW JERSEY TERRA COTTA CO.
Shampan & Shampan, Architects.

drawings present the plumbing and drainage equipment in which 1,967 separate lavatories are shown and 169 drinking fountains for the tenants.

The collapse of several old buildings along the river front at St. Louis, occasioned by the excessive rise in the river, has resulted in renewed agitation by the newspapers of the proposition for a park along the river front. This matter has already received the attention of the Civic League of St. Louis, which published during 1907 plans for just such an improvement.

Each year the Indian Industrial School at Carlisle, Pa., expends thousands of dollars for tools, appliances and materials of construction, for the equipping of their shops and the erecting of new buildings. Manufacturers' catalogues and samples are desired by the superintendent.

Conspiracy is a charge that is always difficult to prove upon legal grounds, especially in Pennsylvania, witness the acquittal of the Harrisburg Capitol grafters. Proof of a sort may be wanting in the eyes of the gentlemen of the law; but that there is guilt on the part of the men recently tried is nevertheless the firm conviction of everyone in the community. This feeling is only intensified by the handshaking and Godspeed given the prisoners by the Harrisburg Court.

The Grant Monument in Washington is to be placed where the House of Representatives did not want it but where Mr. McKim's Park Commission does. Objections were made to the necessary sacrifice of some trees of historical or scientific interest in the Botanical Gardens; but the far greater consideration of the relation of the monument to the full development of the city, and especially that section which will form the new and enlarged Mall, has been weighed and has governed the placing of the new monument.

Progress upon the Cathedral of St. John the Divine, the corner stone of which was laid in 1892, is now marked by the completion of the roof of the choir. Of the chapels which surround this and which are intended to represent the various racial elements of the New York Diocese, the Belmont Chapel, officially known as "St. Saviour's," is expected to be ready for services in October. Good progress is also being made on the ad-

lights themselves being hidden.

The drawings submitted to the Bureau of Buildings for the sixty-two-story building proposed by the Equitable Life Assurance Society are seventy in number. Of these thirteen large

joining Chapel of St. Columba. Future progress depends entirely upon the contributions received, but funds already in hand will render it possible to have the crossing completed by a year from next November.

The Twin City Brick Co. of St. Paul, Minn., is placing upon the market a new brick called the "Autumn Leaf," which resembles the variation in the color of autumn leaves. Two buildings now in course of construction will be faced with these bricks, a Fire Engine House, St. Paul, and Insane Asylum at Rochester, Minn. The color effects are so combined in the individual bricks that they impart a soft rich tone to the entire wall. They have practically been accepted for several important building operations in New York City and Philadelphia.

The American Enameled Brick and Tile Company of New York are supplying their bricks for new building operations as follows:—Electric Plant, Hawthorne, Ill.; St. Vincent Hospital, West Brighton, N. Y.; New Schoolhouse at New Bedford, Mass.; Railway Station, Detroit, Mich.; Fire Department Houses at Everett, Mass., and Detroit, Mich.; State Capitol, Madison, Wis.; New Dispensary Building, University of Pennsylvania; five Public School Buildings, New York City; Belmont Trust Company Building, Philadelphia; Plunge Bath, Sailors' Home, New York City; Plunge Bath, Y. M. C. A., Stamford, Conn.; Plunge Bath, Tennis and Racquet Club, Cambridge, Mass.

WANTED—Architectural Draftsmen. Pay from \$2.80 to \$5.52 per diem. A competitive examination will be held simultaneously at the Navy Yards, Boston, Mass., Brooklyn, N. Y., Philadelphia, Pa., and Washington, D. C., August 3 and 4, 1908, for the purpose of establishing an eligible register of architectural draftsmen. Applications must be delivered on or before July 25, 1908. For application and further information address Commandant of the yard in which the applicant desires to be examined.

Academy Architecture, No. 32

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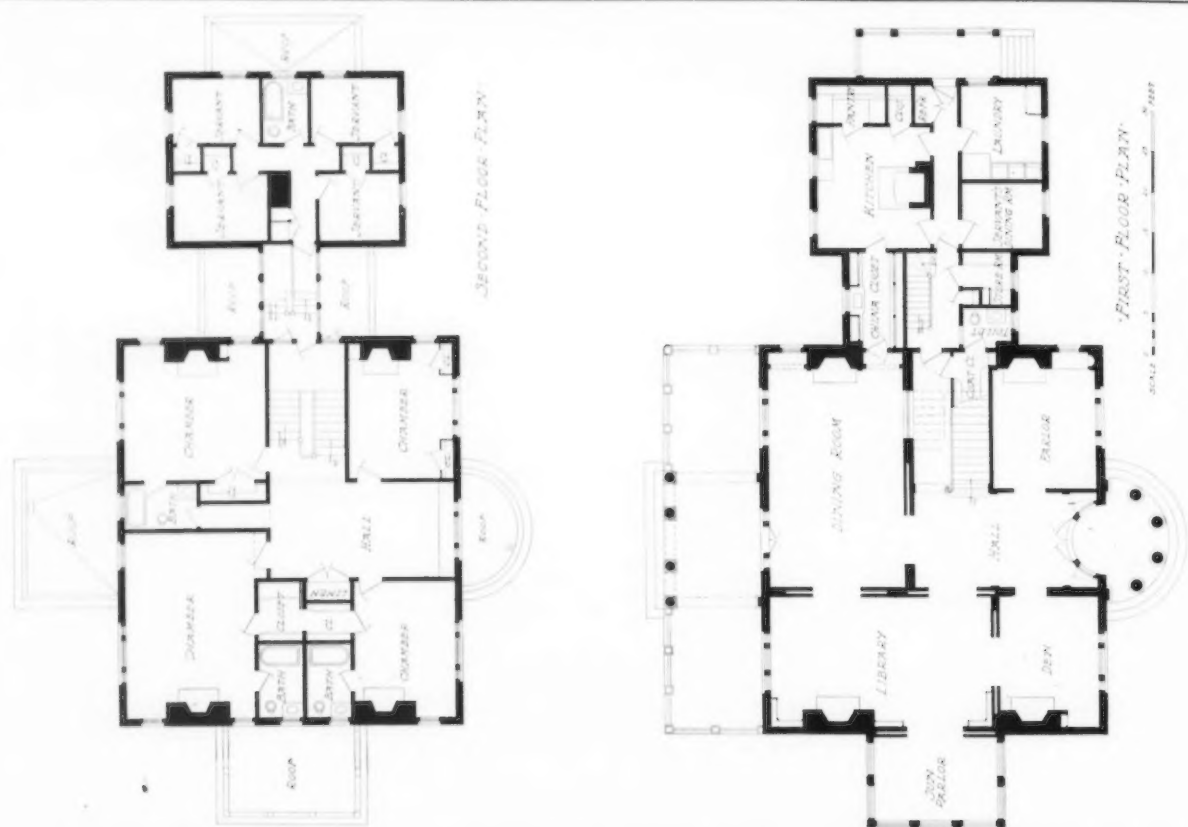


DETAIL BY CONK-
LING-ARMSTRONG
TERRA COTTA CO.,
FOR PACIFIC
MUTUAL LIFE
BUILDING, LOS
ANGELES, CAL.
Parkinson & Berg-
strom, Architects.

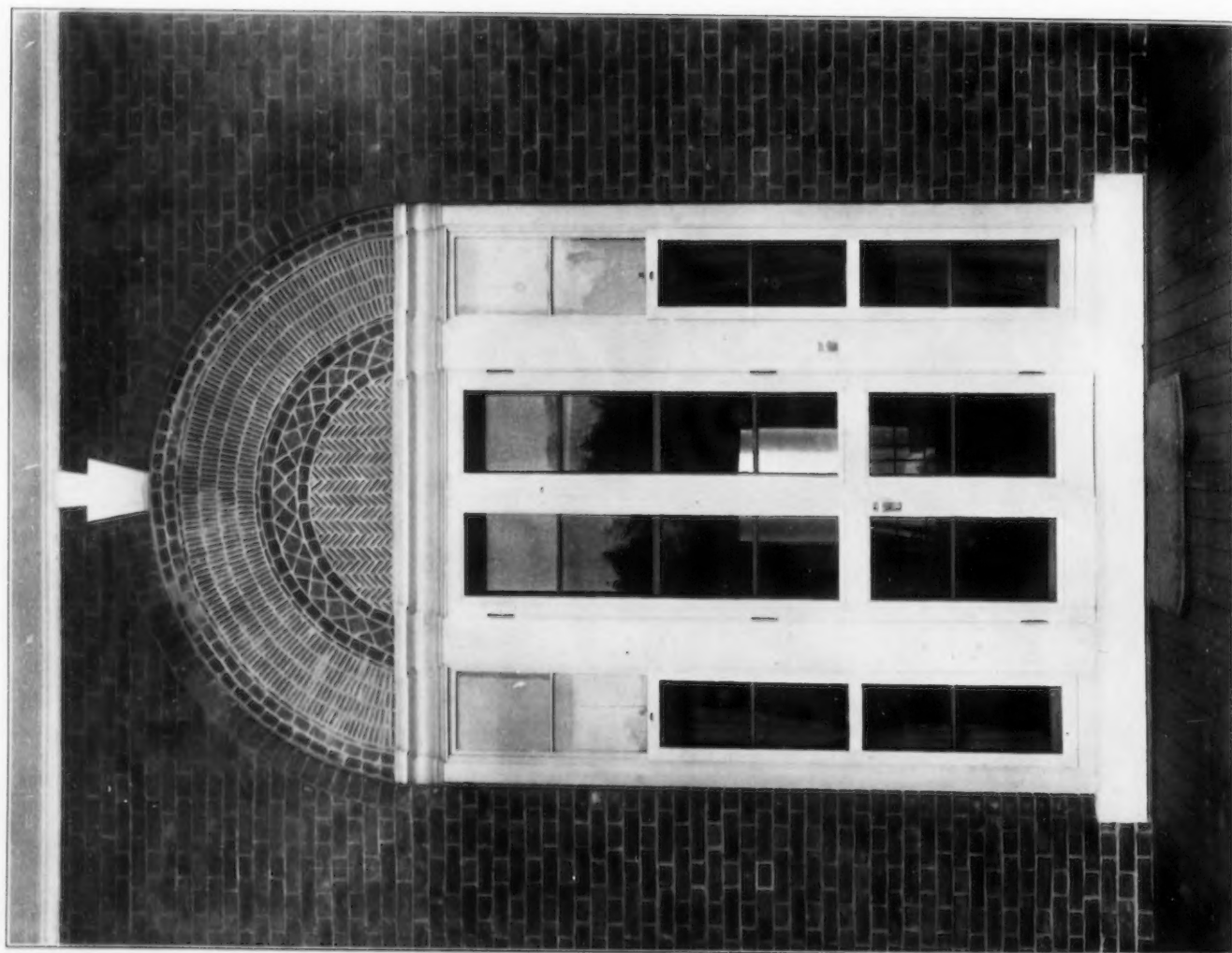


HOUSE AT LEXINGTON, MASS.
PAGE & FROTHINGHAM, ARCHITECTS.





DETAIL OF WINDOW AND PLANS.
HOUSE AT LEXINGTON, MASS.
PAGE & FROTHINGHAM, ARCHITECTS.



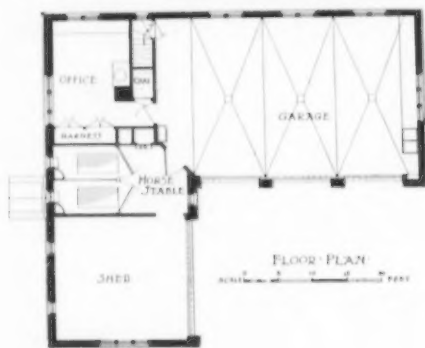


TOWARD THE ROAD.



TOWARD THE GARDEN.

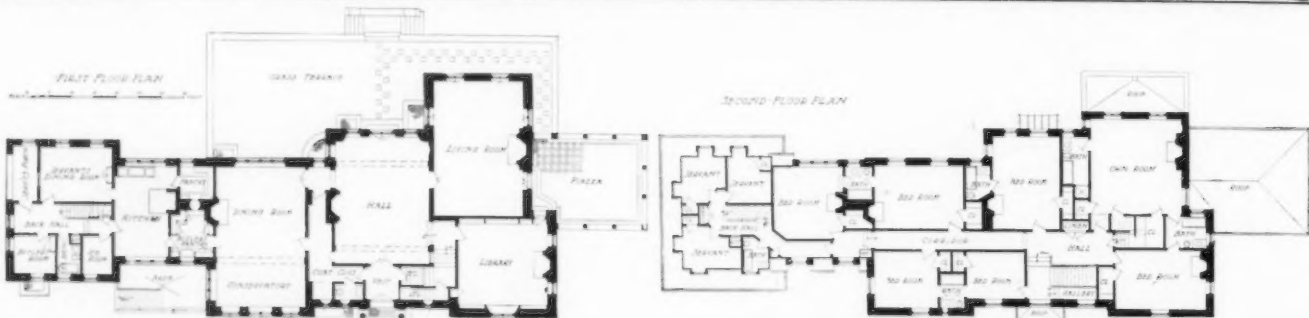
HOUSE, BEVERLY FARMS, MASS WILLIAM G. RANTOUL, ARCHITECT



STABLE AND GARAGE
WITH FLOOR PLANS OF HOUSE
HOUSE, BEVERLY FARMS, MASS.

WILLIAM G. RANTOUL, ARCHITECT.





HOUSE AT DOVER, MASS. WINSLOW & BIGELOW, ARCHITECTS



HOUSE AT
OVERBROOK, PA.
CHARLES BARTON KEEN,
ARCHITECT





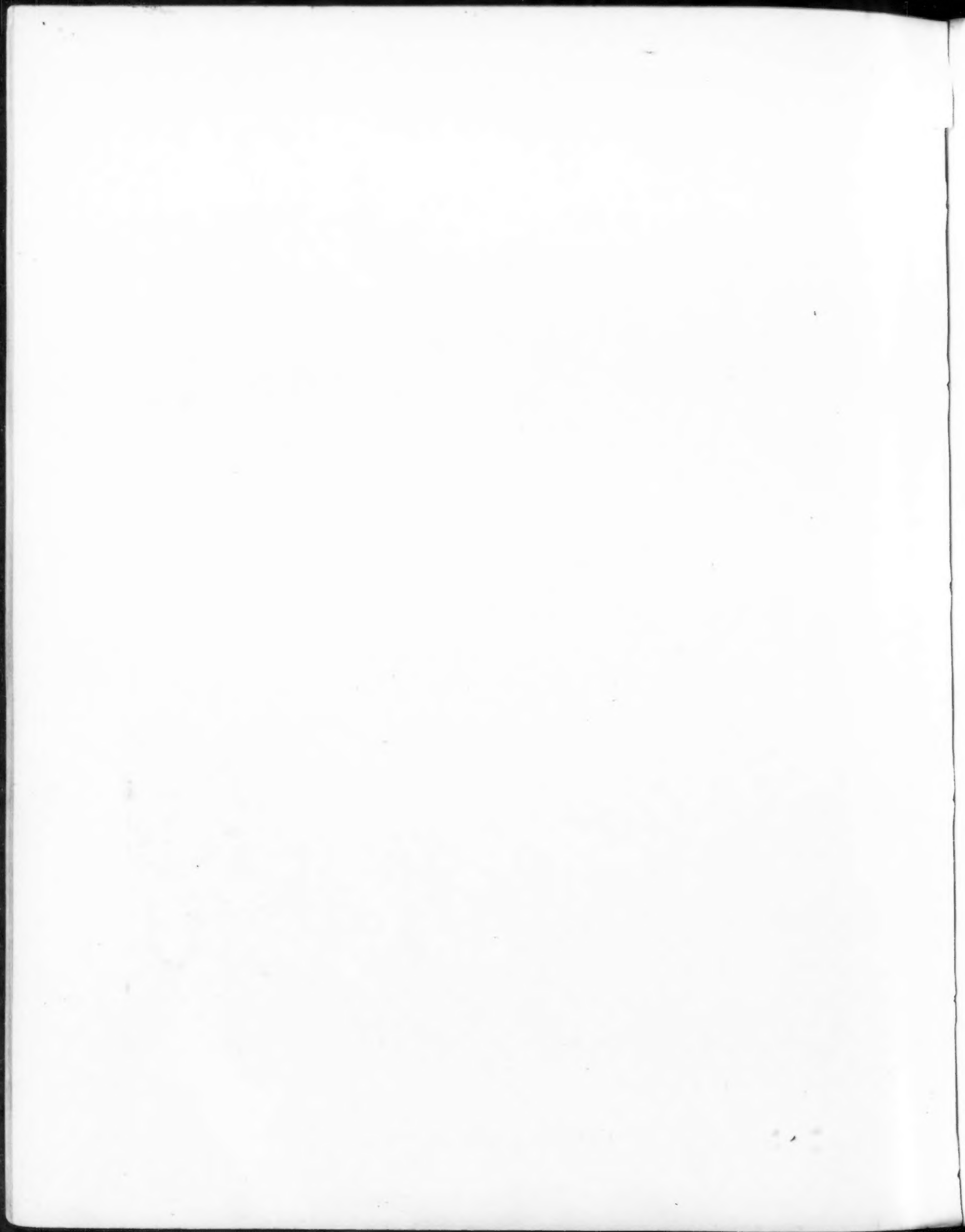
VIEW OF THE FRONT



HOUSE FOR HENRY C. FRICK, ESQ., PRIDES CROSSING MASS
LITTLE & BROWNE, ARCHITECTS.



DETAIL. HOUSE FOR HENRY C FRICK, ESQ., PRIDES CROSSING MASS.
LITTLE & BROWNE, ARCHITECTS.

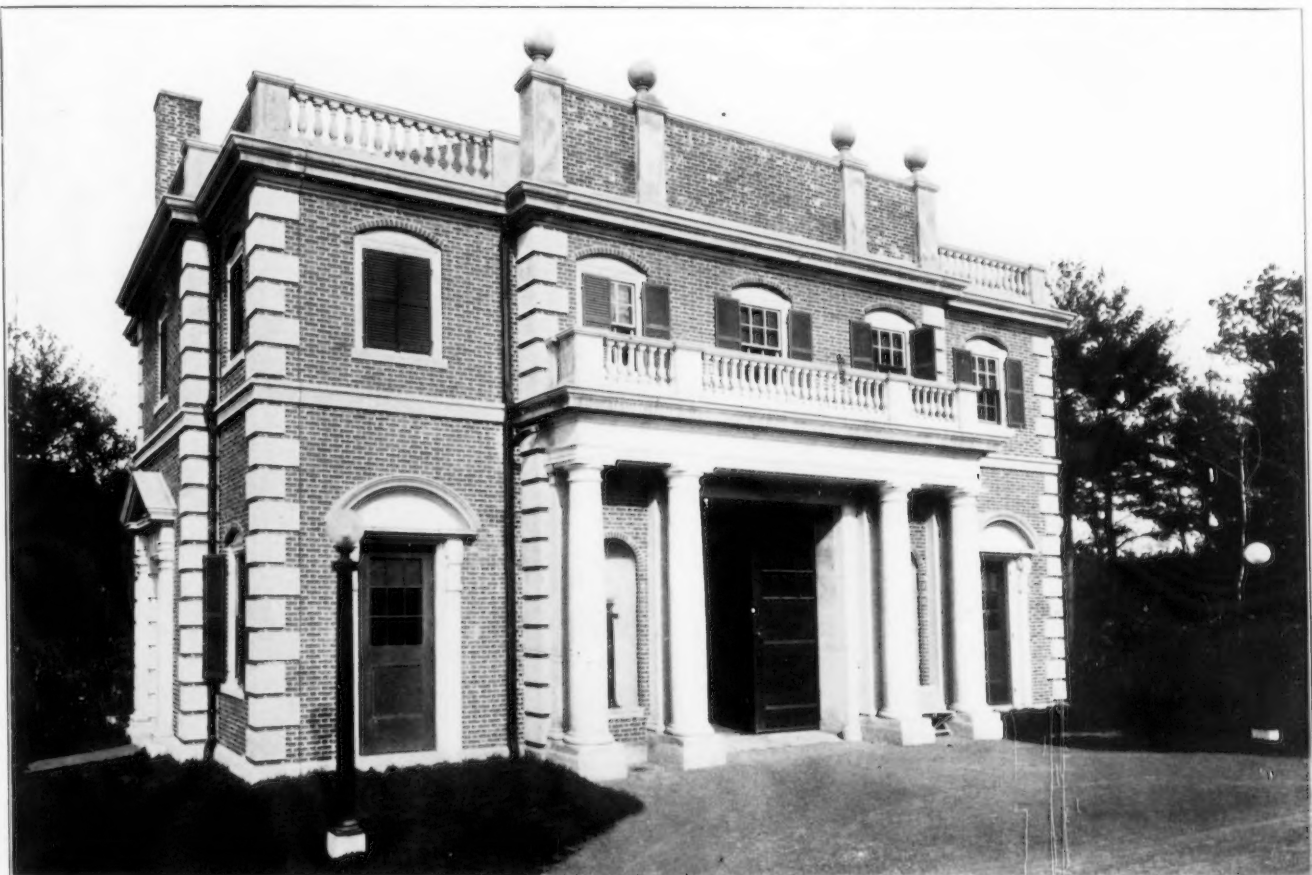




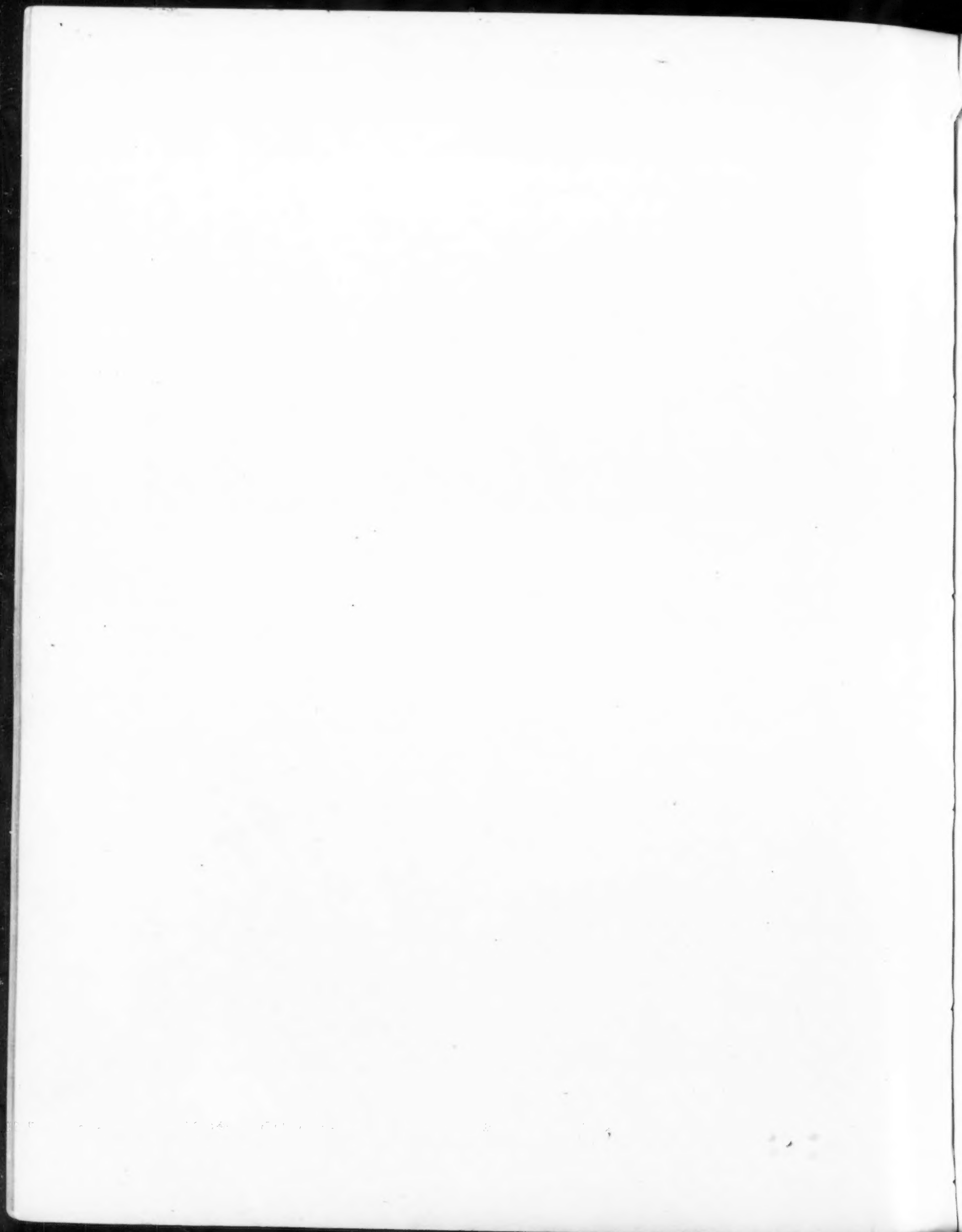
VIEW FROM THE SHORE.



END OF MAIN DRIVEWAY



GARAGE AND POWER HOUSE
HOUSE FOR HENRY C FRICK, ESQ., PRIDES CROSSING, MASS.
LITTLE & BROWNE, ARCHITECTS.



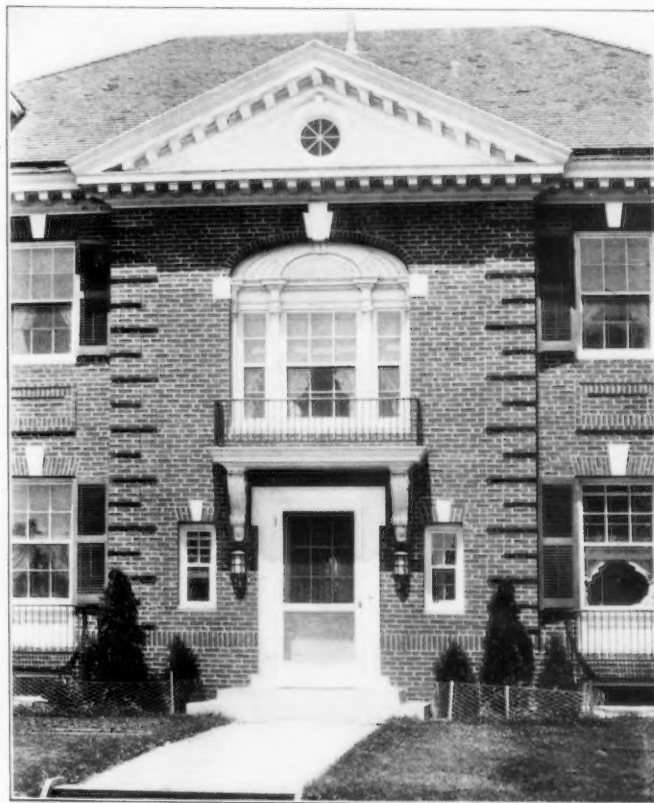


VIEW FROM THE ROAD.

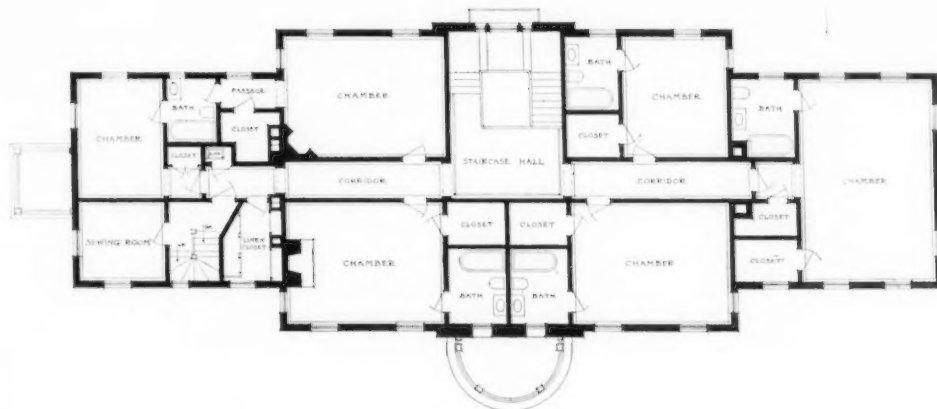
HOUSE AT LEXINGTON, MASS.
OSWALD C. HERING, ARCHITECT.



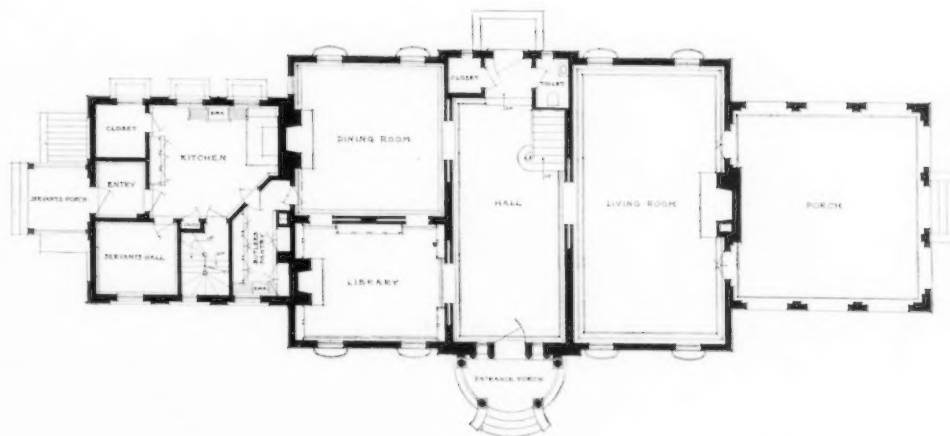
VIEW FROM THE GARDEN.



DETAILS OF ENTRANCES.



SECOND FLOOR PLAN.



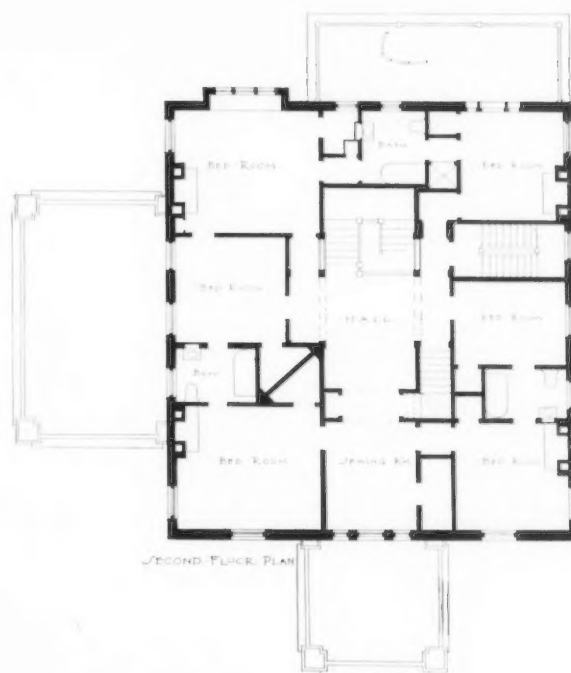
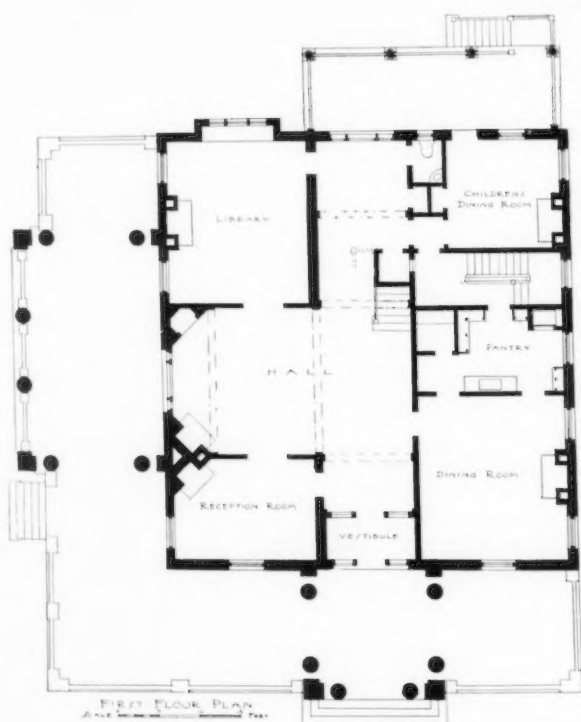
FIRST FLOOR PLAN.

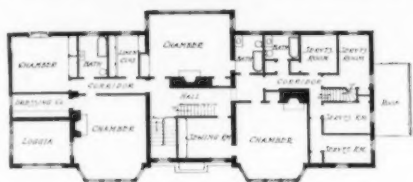
HOUSE AT LEXINGTON, MASS. OSWALD C. HERING, ARCHT.

1847. May 1. Sunday. A fine day. The weather was
very warm and the wind was from the south.

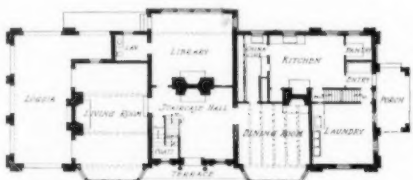


HOUSE AT ROLAND PARK, MD
WYATT & NOLTING, ARCHITECTS.





Second Floor Plan

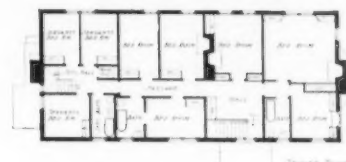


First Floor Plan

HOUSE AT DOVER, MASS.
P. B. HOWARD, ARCHITECT

PLANS AT RIGHT
HOUSE AT CONCORD.

PLANS AT LEFT
HOUSE AT DOVER



Second Floor Plan

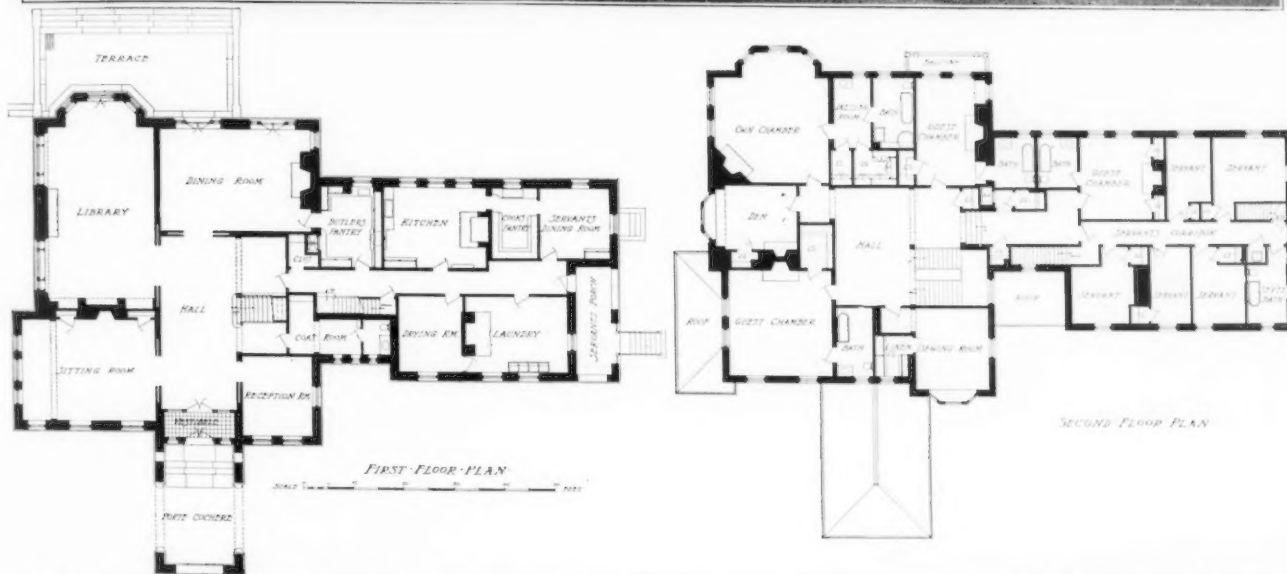


First Floor Plan



HOUSE AT CONCORD, MASS HOWARD & DUDLEY, ARCHITECTS.





HOUSE AT NEW HAVEN, CONN
PEABODY & STEARNS, ARCHITECTS.